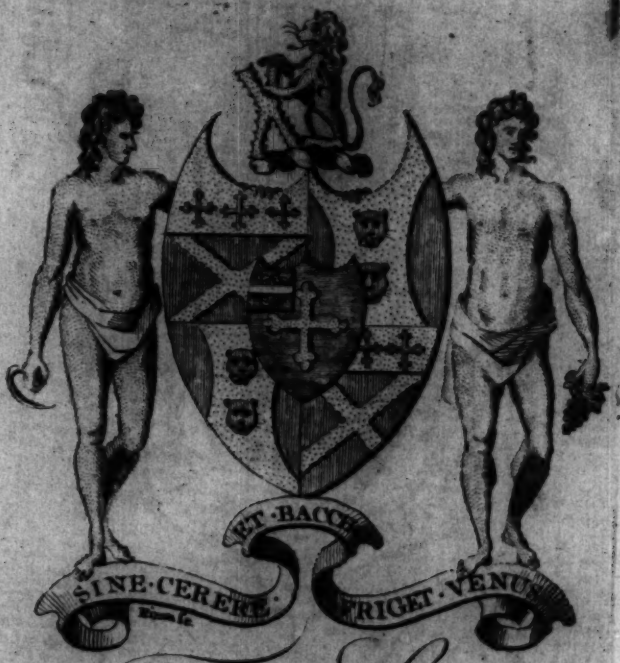

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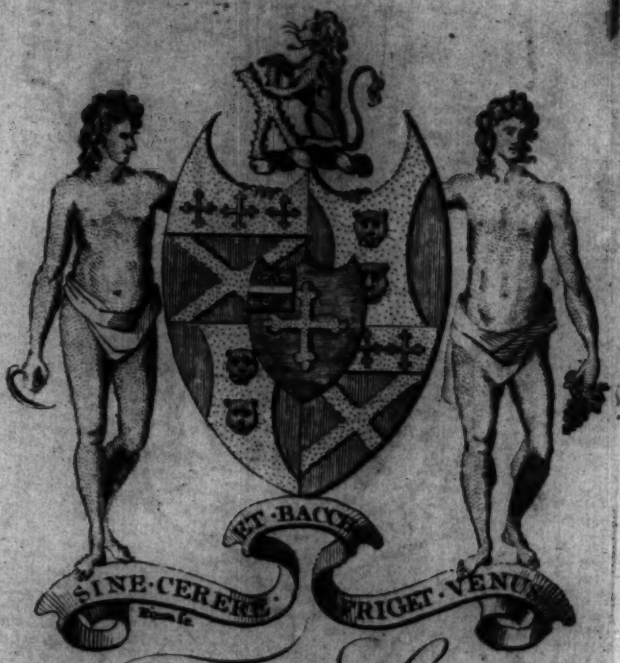

Francis Longe,

SPIXWORTH PARK,

NORFOLK.

1607/3976.

THE NATURAL HISTORY OF FISHES AND SERPENTS,

INCLUDING

SEA-TURTLES, CRUSTACEOUS, AND SHELL FISHES,

WITH THEIR

MEDICINAL USES.

ILLUSTRATED WITH CUTS.

By R. BROOKES, M.D.

THE SECOND EDITION CORRECTED.

To which is added

AN APPENDIX,

CONTAINING

The whole Art of Float and Fly Fishing, the best Rules for the Choice of Tackle, and a Description of natural and artificial Baits.

VOLUME III.

LONDON,

Printed for T. CARNAN and F. NEWBERY, jun. at Number Sixty-five, in St. Paul's Church-Yard.

MDCCLXXII.

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THE

NATURAL HISTORY

OF

FISHES.

CHAP. I.

Of Fishes in general.

WHEN we consider what numberless sorts of fishes have hitherto escaped human curiosity, what a variety are already known, and the amazing fecundity of which they are possessed, we are almost led to wonder, how the ocean finds room for its inhabitants. A single fish is said to be capable of producing eight or ten millions of its kind in a season. *Leuwenhoek* has computed, that there are no less than 9,344,000 eggs in a single Cod.

Nature, however, has removed every inconvenience, which might arise from this amazing encrease, by making the subsistence of one species depend on the destruction of another. The same enmities that subsist among land animals prevail with equal fury in the waters, and with this aggravation, that by land the rapacious kinds seldom devour each other; but in the ocean it seems an universal warfare, fish against fish: the large devour the small even of their own species;

and thoſe that eſcape, in their turn, become the tyrants of ſuch as are ſmaller than themſelves.

As fiſhes are preſſed by unceaſing hunger, we may reaſonably imagine, that they lead a life of continued hoſtility, of violence and evaſion. It is natural to ſuppoſe, that the ſmall fry ſtand no chance in this unequal combat: their uſual method, therefore, of eſcaping, is by ſwimming into ſhallows, where the great ones are afraid or unable to purſue them.

The purſuit of fiſhes is not, like that of terreſtrial animals, confined to a ſingle region: ſhoals of one ſpecies follow thoſe of another through vaſt tracts of the ocean, from the vicinity of the pole, even down to the equator. Thus the Cod, from the banks of *Newfoundland*, purſues the Whiting, which flies before it, even to the ſouthern ſhores of *Spain*.

Fiſhes in general may be divided into thoſe that have lungs, and thoſe that have gills, though they both ſerve for reſpiration. Of the firſt ſort are the Whale kind; of the ſecond, naturaliſts make two diviſions: thoſe that bring forth their young alive, and thoſe that produce ſpawn. Theſe laſt are diſtinguiſhed by the name of ſpinous, becauſe they are provided with ſmall ſharp bones, to ſupport and ſtrengthen their muſcles; whereas thoſe that bring forth their young alive, ſuch as the Scate and Thornback, have only a very ſoft ſort of griſtles. The ſpinous ſort are ſaid to generate without coition; inſtead of which the females dig holes in the bottoms of rivers, ponds, &c. wherein they depoſit their ſpawn, upon which the male immediately after emits his impregnating fluid. However, there are ſome ſpinous or bony fiſh, which bring forth their young alive. Among theſe, ſome think the Eel may be placed, though this is uncertain; for, after various reſearches, it has not yet been diſcovered in what manner they generate.

There are ſome fiſh, which produce large eggs, in the manner of birds, with the yolk and white; and theſe are hatched in their bodies, before they are excluded.

The ſhape of moſt fiſh is much alike; for they taper a little at the head, and by that means are able to traverſe

verſe the fluid they inhabit with greater eaſe. The tail is extremely flexible, and in this lies their greateſt ſtrength: by bending to the right and left, they repel the water behind it, and advance their head with all the reſt of the body. The fins are chiefly uſed to poiſe the body, and keep it ſteady, as alſo to ſtop it when it is in motion. It has been found by experience, that when a fiſh would turn to the left, it moves the fins on the right ſide; and when to the right, it plays thoſe on the left; but the tail is the grand inſtrument of progreſſive motion.

The bodies of moſt fiſh are furniſhed with horny ſcales, which are ſtrong, in proportion to the dangers to which Nature has expoſed them. The ſcales are generally beſmeared with a ſlimy liquor without; and under them, all over the body, there lies an oily ſubſtance, which ſupplies the fiſh with warmth and vigour.

They are enabled to riſe or ſink in the water, by means of an air-bladder, which is included in their bodies: when that is contracted, they ſink to the bottom; but, when it is dilated, they riſe to the top. That this is the true uſe of the air-bladder, and not, as ſome have ſuppoſed, only a reſervoir of air, for the fiſh to breathe from while under water, has been proved from experiments. What is very extraordinary, ſome fiſh have been kept alive and fattened, after having been taken out of their natural element. Carps, when hung up in a cool cellar, in a ſmall net, and covered with wet moſs, their heads however being at liberty, may be fed and fattened with white bread ſteeped in milk. This method has often been practiſed with ſucceſs in *Holland*, as well as at home.

Moſt fiſh are furniſhed with teeth, or ſomething analogous thereto: they are not, however, deſigned for chewing, but only to retain their prey. Theſe teeth are placed in different manners, according to their method of feeding; for in ſome they are in the jaws, palate, and tongue; but in others in the throat; and theſe laſt are called leather-mouthed fiſh.

The eyes of fiſh are generally flat, which is moſt ſuitable to the element in which they live.

Moſt fiſh are provided with a tongue; but ſome of them, as the Carp, have none at all: however, inſtead of it, they have a fleſhy palate. It is hard to determine, what uſe fiſh make of their tongues; for it does not ſerve to form their voice, ſince they are mute; nor does it aſſiſt them in chewing, becauſe they ſwallow every thing whole: nor is it likely to be the organ of taſte, becauſe it is griſtly in all fiſh, except thoſe of the Whale kind: if it does ſerve them for that purpoſe, it muſt be in a very obſcure manner.

Some fiſh have no throat, for the maw or ſtomach is placed next their mouths; but thoſe whoſe bodies are long and ſlender, particularly the Eel kind, have a throat, though they have no lungs. Though the ſtomach of a fiſh has no ſenſible heat, yet it has a wonderful faculty of digeſtion; ſince thoſe of the voracious kind ſwallow not only great numbers of other fiſh, but even Prawns, Crabs, and Lobſters, which their ſtomachs really digeſt or diſſolve.

There are ſome of the watery inhabitants, which may be called fiſhes of paſſage, while others never ſtir from their native country. The Herring firſt has its ſtation towards the north of *Scotland*, from whence they regularly every year make their way, and at length arrive in the *Britiſh* channel. Their voyage is performed with the utmoſt regularity: the time of their departure is fixed from the month of *June* to *Auguſt*, and they always aſſemble together before they ſet out: no ſtragglers from the general body are ever ſeen.

It would be a vain attempt to aſſign the cauſe of theſe migrations: whether it proceeds from the fear of purſuers, or from a deſire of propagating their kind in greater ſecurity; whether they find pleaſure in the change, or whether this long voyage is undertaken in queſt of food, is a ſubject that might ſupply much conjecture, and little ſatisfaction. Certain it is, their numbers are aſtoniſhing: they ſatisfy in their paſſage the rapacity of all the voracious kinds; and, when they arrive at their appointed ſtations, they there fall to the ſhare of man, and make the food of the poor, for a certain ſeaſon, throughout all *Europe*.

Fiſhes

Fiſhes are eaten either fried, roaſted, or boiled; but thoſe that are fried are hardeſt of digeſtion; becauſe the butter, oil, or fat that are uſed, receive bad qualities from the action of the fire. Thoſe that are roaſted or broiled are certainly moſt agreeable to the ſtomach; becauſe they are always eaſy of digeſtion, and their taſte is more agreeable on account of the conſumption of the moiſture in their fleſh. However, there are many phyſicians, who recommend boiled or ſtewed fiſh to valetudinarians, provided they are not ſeaſoned too much. Some kinds of fiſhes are ſalted in order to preſerve them; after which ſome of them are dried with ſmoke, and others in the ſun before they are ſalted; but all theſe preparations render them hard of digeſtion, eſpecially to thoſe that are of tender conſtitutions; for ſome are ſo robuſt that ſcarcely any thing comes amiſs to them, and more particularly if they lead a laborious life.

In general, the fleſh of fiſhes yields little nouriſhment, and ſoon corrupts; it abounds in a groſs ſort of oil and water, and has but few volatile particles, which renders it leſs fit to be converted into the ſubſtance of our bodies; for it is beyond all doubt, that all ſorts of animals, which abound moſt in active and volatile principles, are moſt proper for the aliment of mankind; ſuch is generally the fleſh of quadrupedes and birds that we are accuſtomed to feed upon; whereas that of fiſh, for the contrary reaſons, is leſs proper for nouriſhment, though it generally digeſts and paſſes off the ſtomach very ſoon. However, fiſh is the moſt proper aliment in ſome kinds of diſeaſes, in which ſtronger nouriſhment would be very prejudicial.

CHAP. II.

Of Fiſhes of the Whale kind.

THIS ſort of fiſh, as we obſerved in the firſt chapter, are endowed with lungs, with which they breathe, uſe coition, bring forth their young alive, nouriſh them with their milk, and reſemble

quadrupedes in their internal parts. Authors very much diſagree with reſpect to the ſize of this fiſh: *John Faber* aſſerts, that he ſaw one at *Corſica* an hundred feet long; while *Frederick Martens* inſiſts, that the largeſt Whales caught at *Spitzbergen* ſeldom exceed ſixty feet in length. It is however certain, that there are Whales of a larger ſize than thoſe mentioned by *Martens*, there being at this time the ſkeleton of a Whale, at Mr. *Rackſtrow*'s in *Fleet-Street*, which meaſures ſeventy-two feet in length, and of which we ſhall ſay more in its proper place. We ſhall divide our deſcriptions of the Whale only into two claſſes, the one *without*, and the other *with* teeth.

* The COMMON TOOTHLESS WHALE, without fins on its back, has the cleft of its mouth eighteen feet long, which is near one third the length of the fiſh. Inſtead of teeth, there are long, black, and ſomewhat broad, horny flakes, all jagged like hairs. It differs from another kind of Whale, called the Fin-fiſh, which has a great fin on its back, whereas the Whale, properly ſo called, has none on that place; but there are two fins behind the eyes, of a bigneſs proportionable to the body, covered with a thick black ſkin delicately marbled with white ſtreaks. In the tail of one that was marbled very delicately, there was the number 122 figured very evenly and exact, as if painted. This marbling is like veins in a piece of wood, and gives this animal great beauty: theſe fins ſerve to ſteer the Whale. The tail does not ſtand upright, as in other fiſh, but lies horizontally.

On both lips there are ſhort hairs in front. Theſe lips bend a little like an *S*, and terminate underneath the eyes, before the two fins. Above the upper bended lip there are ſtreaks of a darkiſh brown, which are as crooked as the lip itſelf.

On the inſide of the upper lip is the whalebone, which is of a brown, blackiſh, and yellow colour, with

* Where the above mark is prefixed to any deſcription, it is to inform the reader, that ſuch fiſh, &c. is repreſented among the engravings. By referring to the index at the beginning of this volume, he will there ſee in what page to find it. Where it could be done, the engraving fronts the deſcription.

Whale.

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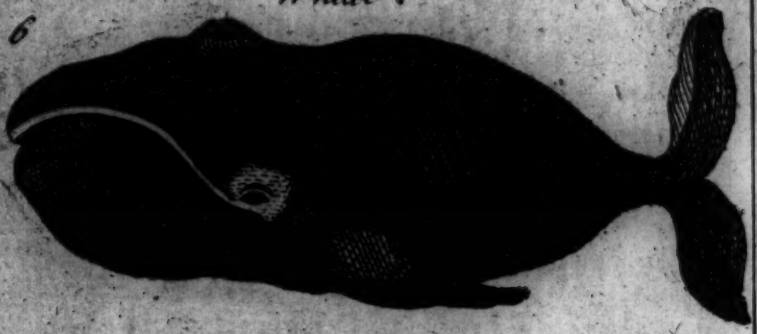
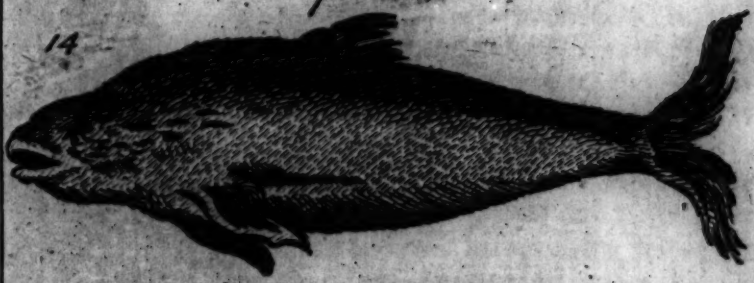


Fin-Fish.

13

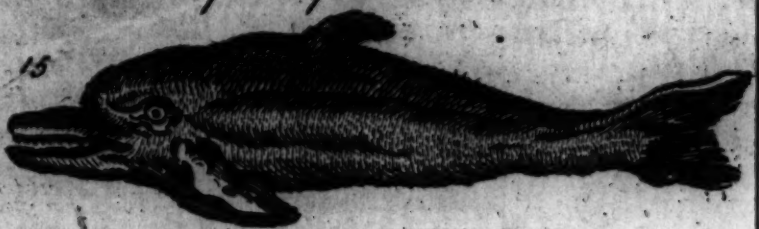
Porpus.

14



Dolphin of the Antients.

15



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with ſtreaks of ſeveral other colours. In ſome Whales theſe are of a light blue, ſometimes of a darkiſh blue. Juſt before, on the under lip, is a cavity or hole, which exactly fits the upper, which ſlides into it, as a knife into a ſheath. Within the mouth there are hairs, like thoſe of a horſe, hanging down on both ſides all about the tongue.

The ſmalleſt whalebone is in the fore part of the mouth, and behind, towards the throat; but that in the middle is the largeſt and ſtrongeſt; it being ſometimes of the length of twelve or fourteen feet. On one ſide, all of a row, there are two hundred and fifty pieces of whalebone, and as many on the other. However, there are more than theſe; but the ſailors do not think it worth while to cut the very ſmall pieces out, and probably they cannot eaſily get at them.

The lower part of the mouth of the Whale is commonly white, and the tongue lies among theſe whalebones, being very cloſe tied with the under chap: it is very large and white, with black ſpots on the edges, and conſiſts of a ſpungy fat, which cannot eaſily be cut. Upon the head is a bump, placed before the eyes and fins; and on the top of it, on each ſide, there is a ſpout-hole placed over againſt each other, which are bent like the holes cut in the upper part of a violin. From theſe holes they blow the water very fiercely, inſomuch that it roars like a hollow wind, which may in common be heard three miles, but much further when he is wounded.

The head of the Whale is not round at the top, but ſomewhat flat, and ſlopes downwards, like the tiling of a houſe, to the under lip. This under lip is broader than any part of the body, and moſt in the middle; for before and behind it is ſomewhat narrower, like the ſhape of the head.

Behind the bump, and between that and the fins, the eyes are placed, which in ſome are not much bigger than thoſe of an ox, and have eye-lids and hair, like thoſe of a man. The eyes are placed very low, and almoſt at the end of the upper lip.

The belly and back are quite red, except the middle of the belly, which is white; though in ſome it is as black as a coal. They make a beautiful appearance when the ſun ſhines upon them; and the waves of the ſea, which run over them, glitter like ſilver. Some Whales have been ſeen entirely white, and it is not uncommon for one half of them to be white. Thoſe that are black are ſo in different degrees; for ſome are as black as velvet, others as charcoal, and others again are of the colour of a Tench. The ſkin is as ſlippery as that of an Eel, and yet a man may ſtand upon it, becauſe it is ſo ſoft, that it ſinks beneath his weight. The outer ſkin is as thin as parchment, and may be eaſily pulled off; but the real ſkin is an inch thick. The penis is a ſtrong ſinew, and is from ſix to eight feet long; part of which appears outwardly, like the haft of a knife in a ſheath. At the ſides of the pudendum, in females, there are two breaſts, with teats, like thoſe of a cow. It is generally ſuppoſed, that they have but two young ones at a time; for never more than that number has been diſcovered within them.

The fleſh is coarſe and hard, and looks like that of a bull; but it is mixed with a great number of ſinews. Some of it looks green and blue, like ſalted beef, eſpecially at the meeting of the muſcles. When the ſailors feed upon any of it, they cut large pieces off the tail, where it is beſt, and boil it like other meat. Some ſeem to like it pretty well, eſpecially the *French*, who dine upon it almoſt every day; nor will they reject that which has lain till it is black.

There are now, in the *Britiſh Muſeum*, the jaws of a Whale of the toothleſs kind. This fiſh was taken in the year 1718, at the mouth of the river *Thames*, and before the bones were depoſited where they now are, were the property of Sir *Hans Sloane*. It is probably owing to their bulk, that this curioſity is kept in a very obſcure part of the *Muſeum*, and not ſhewn with the other valuable and leſs cumberſome productions of nature. The two bones, which form the lower jaw, are each about nineteen feet in length, and meaſure above four feet round in the largeſt part.

Though

Though they come nearly to a point at the extremity of the ſnout, where they join cloſely together, yet, within little more than half way, they are almoſt eight feet aſunder, when they begin again to taper a little towards the upper part. The upper jaw is not divided, like the lower, into two wide-ſpreading branches, but ſeems at firſt view to be only one ſolid bone; though, on a cloſer inſpection, it appears to be in four pieces, which nature had joined together in a moſt curious manner. It meaſures nearly the ſame in circumference as the lower jaw, to which it bends down, and joins at the ſnout. The ſocket of the eye is not ſo round as that of the ſpermaceti kind, it being a yard one way, and only about twenty-one inches the other. The gullet hole, for ſo large a fiſh, is very inconſiderable, being hardly ſix inches wide; but a narrow ſwallow is ſaid to be common to all Whales.

As theſe are affirmed to be the jaws of a very young fiſh, when we compute the length of it to have been three times that of the head, which is conſidered as the proportion of this ſpecies, we may be permitted to conjecture, that thoſe, which are aged and full grown, may much exceed the extent preſcribed by either *Martens* or *Faber* in the beginning of this chapter.

On a ſtone pedeſtal, in the court-yard of *St. James*'s, is placed one of the bones of the *lower jaw* of a Whale, which is of the ſame kind, and nearly as large, as the above deſcribed. We ſhould not have thought this a matter worthy of any notice, had it not been to rectify a miſtake of the numerous ſpectators who daily view it, and who are apt to call it a *rib*. The jaw bone may, however, be eaſily diſtinguiſhed from the rib; for the former is of an irregular bend, whereas the latter is circular; the rib alſo meaſures three fourths leſs in circumference than the jaw bone.

The SPERMACETI WHALE differs much from the former: it has teeth, whereas the other has none; nor is the head near ſo large, in proportion to the body, as that of the toothleſs Whale.

In *January*, 1762, a ſpermaceti Whale was brought into *Greenland-Dock* by a trading veſſel. Thoſe, who were concerned in taking it, give the following account of this fiſh, and the manner in which they killed it.

As they were going through the *Hope*, they ſaw ſomething floating at a diſtance, which appeared to them like the maſt of a ſhip; but, as they approached it, they diſcovered it to be a large fiſh, and, upon ſeeing it caſt up a great quantity of water, concluded it was a Whale. They chaced him aſhore below the *Hope-Point*, and then went off to him in their boats. He ſeemed a motionleſs lump, his head and tail being concealed in the water. They firſt pierced the prominent parts; and, after having dug a hole twelve inches deep, a great torrent of blood iſſued forth. Upon this they withdrew to a diſtance, and ſoon after the boat had paſſed him, (as the water was deep enough over his tail) he ſtruck the ground with ſuch violence, as to force up ſtones and mud to a great height in the air. They waited about three quarters of an hour, and then he expired with the moſt horrible groans. After this, they faſtened a cable to his body, and at laſt brought him to *Greenland-Dock*, where he was ſeen by ſeveral thouſands of people.

They took out of his head eight puncheons of ſpermaceti, which lay between the eyes and the ſpout-hole, in different cells of the brain. Its extreme length was fifty four feet, and its breadth fourteen; the lower jaw was ten feet, and the length of the penis eight: the tail meaſured fifteen feet.

At Mr. *Rackſtrow*'s Exhibition-Room, in *Fleet-Street*, is the ſkeleton of a Whale of this kind. Thoſe who ſhew this curioſity ſay, that it will contain thirty people in its head, and fifty in its cheſt; and that twelve hogſheads of ſpermaceti oil were taken out of its upper jaw, or rather that part of the head above it, which was entirely compoſed of fleſh and oil.

This Whale was thrown aſhore on the *Iſle of Thanet*, *Feb.* 2, 1762 *, and meaſures, from the ſnout to

* This date is agreeable to the information given by the perſon, who ſhews Mr. *Rackſtrow*'s curioſities; but, if we may judge

to the tail-fin, ſeventy-two feet. The upper jaw, which appears to be one ſolid bone, is ſixteen feet long, and ſix broad at the top, where it is wideſt, and from whence it grows narrower to the end of the ſnout, which terminates in a point. Along the middle of it runs a deep round groove, through which he ſucked up the water, which he afterwards diſcharged at the ſpout-hole. From the top of this jaw proceeds a large thick bone, which turns upwards almoſt perpendicularly to the height of about four feet, and forms as it were part of a kind of ſkull. The under jaw is not near ſo wide as the upper, herein being juſt the reverſe of the toothleſs Whale. At the diſtance of about eight feet from the ſnout, it divides and becomes forked, in order to receive in the cavity a protuberance of the upper jaw, which ſeems exactly to fit it. This jaw had two rows of teeth, of which only one tooth is now remaining; but as this is quite looſe, and kept in its place only by a piece of wire, it leaves ſome room to doubt, whether it be the real tooth or not. The upper jaw has no teeth; but, inſtead thereof, there is a groove or ſocket to receive thoſe of the lower: ſo that, when the mouth was ſhut, they muſt have reſembled ſo many pointed weapons in a ſheath. The ſockets of the eyes, which are nearly round, and placed almoſt at the furtheſt part of the jaws, meaſure about eighteen inches over. Hence, what is told us by ſome writers, that the chryſtalline humour of the eye in this fiſh is not bigger than a pea, muſt appear to common reaſon as a fable; for we muſt not ſuppoſe, that Nature is ſo unequal in her proportions. Beyond the ſockets of the eyes are the two fin bones, which are very thick, five feet long, and two feet three inches in the broadeſt part. There are eleven ribs on each ſide, the largeſt of which is ten inches in circumference. The ribs form a cavity, eight feet wide, within the body of the fiſh, and in which were con-

judge from the appearance of the ſkeleton, the animal muſt have been thrown aſhore *many* years previous to the time here mentioned.

tained the heart, lungs, &c. The back-bone is at much the ſame diſtance from the floor, by which the ribs are ſupported. The back-bone, which is three feet ten inches thick, (meaſured in the round part only; for the upper part of it is cloſely ſet, throughout the whole length of it, with ſpinal bones, like thoſe of a hog) and the tail-fins, compoſe the reſt of this ſkeleton. The tail-fins, which are yet remaining, are each eight feet long; and the penis, though dried, ſeven feet ſix inches.

Though many parts of this ſkeleton ſeem much decayed, probably owing in a great meaſure to the injuries it muſt have unavoidably received in being removed from place to place, it is nevertheleſs highly worthy the attention of thoſe, who delight in natural curioſities.

Naturaliſts divide the different ſpecies of Whales into various claſſes; but to enumerate them all would be too tedious, and perhaps very little intereſting to the reader: we ſhall content ourſelves with obſerving, that the ſubſtance called Spermaceti, which is prepared from the brain of this fiſh, is an excellent balſamic, and a very valuable medicine in diſeaſes of the breaſt; as alſo to blunt the ſharpneſs of the humours. It is very efficacious in old coughs, proceeding from defluxions, and in all internal ulcers. Indeed, various are the uſes of this medicine, with reſpect to internal application: when applied externally it is emollient and vulnerary, and is often uſed as a coſmetic, to ſoften the ſkin, and to render the complexion clear*.

The

* The *Dutch*, for three hundred years, had the whale-fiſhery almoſt to themſelves, and it is ſtill one of the principal branches of their trade. Each veſſel of three hundred tons has ſix ſhallops, and each ſhallop is allowed a harpoonier, with five ſailors to row it. The inſtrument, with which they ſtrike the fiſh, is a harpoon or javelin, five or ſix feet long, pointed with ſteel, like the barb of an arrow, of a triangular ſhape. The harpoonier, ſtanding at one end of the ſloop, when at a proper diſtance from the Whale, darts the harpoon with all his force into the Whale's back, where, if it faſtens, he lets go a ſtring tied thereto, at the end of which is a dry gourd: this, by its ſwimming on the water, ſhews

The FIN-FISH is as long as a Whale, but three times leſs in bulk. It is known by the fin on the back near the tail, and by its ſpouting up the water more violently and higher than the Whale. The back is ſtraighter than that of a Whale, and the lips are of a browniſh colour, appearing like a twiſted rope. The Whalebone hangs from the upper lip, as it does in the Whale, but not out of the mouth at the ſides, as in that animal. The inſide of the mouth, between the whalebones, is all over hairy, and is of a blue colour, that is when the bone begins to grow; for the other is brown with yellow ſtreaks, which are thought to be the oldeſt. The colour of this fiſh is like that of a Tench; and the ſhape of the body is long and ſlender. The tail is flat like that of the Whale, and he ſeldom appears till the Whales are gone.

The BUTS-KOPF, that is, the FLOUNDERS-HEAD, is beſt known in *England* by the name of GRAMPUS. In the ſnout, fins and tail, it reſembles a Dolphin, but the body is four or five times as thick, eſpecially about the belly: it is eighteen feet long, and above ten feet thick. The ſnout is flattiſh and turns upwards, and the lower lip is ſo thick, that it falls from the upper as the fiſh lies along. The mouth is armed with forty teeth, of which the foremoſt are blunt and ſlender, but the hinder are ſharp and thick.

The SEA UNICORN is often met with near *Iceland*, and other countries that lie very far North. It is a kind of Whale, is from ſixteen to twenty feet in length, and has a large horn growing at the end of the ſnout.

It

ſhews whereabouts the Whale is; for, as ſoon as he is ſtruck, he plunges to the bottom. However, great care is taken, that the line may be long enough; for if that in one ſhallop ſhould be too ſhort, they fix it to another from the neareſt ſhallop, and another after that, if there ſhould be occaſion. The cord often runs out ſo ſwiftly, that it takes fire, if it is not kept wetting with a ſwab. When the Whale riſes for breath, they attack him again and again, till he begins to grow weak by loſs of blood, and then they plunge their javelins into various parts of his body, by which means they ſoon diſpatch him.

It is of a ſpiral ſhape, and may be ſeen of different weights and ſizes in the cabinets of the curious; ſome of which are at leaſt three ells in length. Theſe were formerly thought to be the horns of a land animal called a Unicorn; but now the learned are convinced, that no ſuch creature is any where to be found.

It is very uncertain, whether theſe ſort of fiſh are every where of the ſame ſhape, and the horns of an equal length; for we are informed they are ſeen in very diſtant ſeas.

The PORPUS, or PORPESSE, is a fiſh often ſeen in the North ſeas, and particularly about *England*. It is ſo called from PORCUS-PISCIS, or the HOG-FISH, from the great quantity of fat that covers the whole body, much in the ſame manner as in a hog. It is about ſix feet long, and is frequently ſeen leaping in and out of the water, making an uncouth kind of a noiſe like ſnorting. Its ſhape is long and round, but towards the tail it is ſmall, tapering like a cone, and at the very root of the tail it is flat. The ſnout is long and ſharp, and well furniſhed with ſtrong muſcles, to enable it to dig up ſmall fiſh out of the ſand. The ſkin is thin, ſmooth, and deſtitute of ſcales; and the back is of a very dark blue, inclining to black. About the middle of the ſides it begins to grow whitiſh, and the black ſpots and ſtreaks, wherewith it is beautifully painted, at the meeting of the colours, gradually change into a perfect white.

It has no gills, nor holes where the gills ſhould be; but on the top of the head there is a wide pipe, which opens like a half-moon, and inwardly is divided by a bony ſubſtance, as it were into two noſtrils. Theſe afterwards unite in one, and open with a ſingle hole into the mouth near the gullet.

The eyes are ſmall when conſidered in proportion to the bulk of the body, at leaſt as to outward appearance. The mouth is not wide, but is furniſhed with forty eight teeth regularly placed and diſpoſed, there being ſpaces left between the teeth of the lower jaw to receive thoſe of the upper, and

on the contrary. They are all ſharp, and ſeem to be a little looſe in their ſockets; the tongue is flat, ſmooth, and connected throughout its length to the bottom of the mouth. There are only three fins beſides the tail; one of which is ſeated on the back, and two near the parts where the gills are ſeen in other fiſh. The tail is placed horizontally, like that of a Whale, which is ſuppoſed to be neceſſary to enable this fiſh to riſe often and take breath.

The belly, as well as all other parts of the body, is covered with fat, which has a tendency to preſerve the equilibrium between the fiſh and the water; for otherwiſe it would be difficult for it to riſe therein. The fat is likewiſe a great defence againſt the cold, as it tends to preſerve the natural heat, ſerving for the ſame purpoſe as warm cloaths does to men in the ſevere weather of the winter. The fleſh is red, and looks very much like pork *.

The DOLPHIN *of the Ancients*, properly ſo called, is of the Whale kind, and is covered with a ſmooth hard ſkin. It has an oblong roundiſh body, with a long round ſnout, turned a little upwards. The cleft of the mouth is long, and ſhuts very cloſe; and the teeth are ſmall and ſharp. The tongue is large and fleſhy, and the eyes alſo large; but they are outwardly ſo much covered with the ſkin, that nothing but the pupil appears. They are placed near the corners of the mouth, and almoſt in the ſame line. There is a double tube, or pipe, on the top of the ſnout, through which it ſpouts out water. It is placed juſt before the brain, and communicates with the wind pipe; and there is a very ſtrong fin on each ſide, not far from the mouth, and another on the back, which is partly bony, and partly griſtly. The tail is made up of two fins.

The ſkin is thick and firm, but ſoft, on account of the fat that lies underneath; and on the back it is black, but on the belly white. The fleſh is blackiſh, and reſembles that of a hog, and the inner parts are not unlike thoſe of

* This fiſh is ſeldom caught but by chance, or when they run on ſhore in purſuit of their prey; for the fleſh is not deſirable to feed upon, and there is nothing but the fat to tempt fiſhermen to take them.

of the Porpus; but it differs from that fiſh, in having a long ſnout ſomewhat like a gooſe, and being more ſlender and fleſhy, though not ſo fat. They live to a conſiderable age, ſome ſay twenty-five or thirty years; and ſleep with their ſnout out of the water. When they ſeem to play on the top of the water, many affirm it is a ſign of an approaching tempeſt. They ſwim exceeding ſwift, and paſs at a ſtated ſeaſon out of the *Mediterranean*, through the *Dardanelles*, into the *Black* ſea. They are ſometimes ſeen in ſhoals, and there is ſuppoſed to be always a male and female at leaſt together. They will live three days out of water, during which they are ſaid to make ſuch a mournful noiſe, as to affect thoſe greatly, who are not uſed to hear them.

CHAP. III.

Of Fiſhes of the griſtly kind.

THE WHITE SHARK is the largeſt of this kind, for ſome of them weigh one thouſand pounds, and are ſixteen feet in length. Some pretend that they have ſeen thoſe of four thouſand pounds weight, and particularly one that had an entire man in its belly.

The head is large, and ſomewhat depreſſed, and the ſnout oblong. The mouth is enormouſly wide, and the teeth very numerous and terrible, there being five or ſix rows of them, which are extremely hard and ſharp, and of a triangular figure.

The fins are larger, in proportion, than in other fiſh; and the tail is forked; but the upper part is conſiderably longer than the lower. There is one fin on the back, another near the tail, two on the belly, between which the vent is placed, and there are alſo two near the gills and mouth. The ſkin is rough, the eyes large and round, and furniſhed with variety of muſcles. The mouth is not placed, as in other fiſh, at the end of the ſnout, but under the eyes at ſome diſtance from it, which obliges him to turn on his back when he takes his prey.

The

The fleſh is white, and has no great rankneſs in its taſte; for which reaſon it is frequently eaten by ſome of our ſailors, eſpecially when they can come at nothing better.

Sharks often follow ſhips for a long while together, at which time the ſailors catch them by ſtriking a barbed inſtrument, called a fizgig, into their bodies, and ſo draw them up into the ſhip. As ſoon as he is laid upon the deck, he begins to flounce in a terrible manner with his tail; and therefore they cut it off with an ax, as faſt as they can. They ſometimes bait a large iron hook, made faſt to a thick rope, with a piece of ſalt beef, which he will ſwallow very greedily, and then they drag him on board.

This fiſh is not only found in the *Mediterranean*, but alſo in moſt parts of the ocean; and it is no uncommon thing for them to lay hold of a man's leg or thigh, when they have an opportunity, and either drag him into the water, or bite the limb off.

The BLUE SHARK is as bold and miſchievous a fiſh as any that ſwims, and has a back of a lively blue colour, but its belly is of a ſilver white. The ſkin is not rough; the ſnout is long, ſharp, flat, and indented with many ſmall holes above and below. The length is from ſix to eight feet, to which the thickneſs is proportionable. The mouth is very large, and placed as in the former, with teeth ſharp and notched like a ſaw; but there are not ſo many as in the White Shark. The holes of the gills are five on each ſide, and the tail is divided into two parts. It is to be met with in various parts of the ocean, and often appears near the ſea-coaſts of *Cornwall*.

The SEA-FOX, or SEA-APE, ſo called on account of the length of its tail, and the ſtrong ſmell of the fleſh, which is like that of a fox, is ſometimes ſo large as to weigh above a hundred pounds; and has a round thick body, a ſmall mouth, a little below the ſnout, which is ſharp, and armed with teeth. This fiſh reſembles the ſhark in almoſt every part of it, except the body and tail; for the body of that is thicker and ſhorter, and the tail much longer than in any of this kind. The ſkin of the belly is white, and that of the back

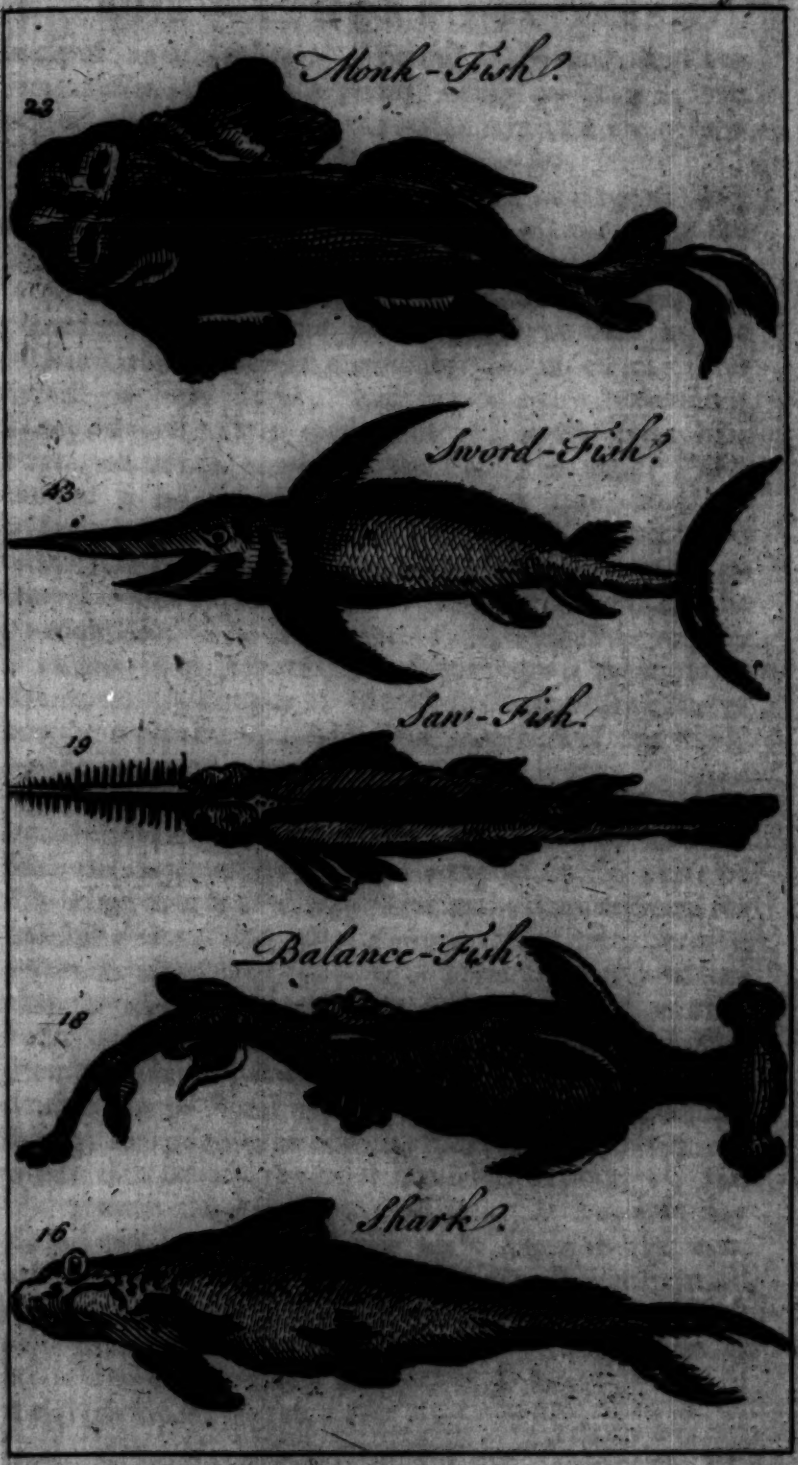
back of an aſh-colour. The tail is crooked, and has ſome reſemblance to a ſword, being as long as the reſt of his body, and at the root there is a fin. It is uſually met with in the *Mediterranean* ſea.

The BALANCE-FISH is often as large as ſome of the Whale kind. It differs from all others in the monſtrous ſhape of the head, which reſembles a ſmith's large hammer, at each end of which the eyes are placed; but the fore part ſwells out into a ſort of ſemicircle, only it terminates in an edge. The mouth is very large, and armed with exceeding ſtrong, broad, ſharp teeth, notched at the ſides like a ſaw, of which there are three or four rows. The tongue is broad, and like that of a man; and the body is round and long, without ſcales, and covered with a ſkin like leather. The ſpines on the back are continued to the upper part of the tail, where there are fins on each ſide. The leſſer horn of the tail, if it may be ſo called, is very ſhort. In other things it reſembles a Shark, and is a native of the *Mediterranean* ſea; but it may be eaſily diſtinguiſhed, from all others of this kind, by the ſhape of its head.

The PICKED DOG, or HOUND FISH, has a roundiſh oblong body, which is covered with a rough ſkin, that is generally known among us by the name of fiſh-ſkin, and is uſed by joiners and other artificers for poliſhing wood and other things. The back is of a browniſh aſh-colour, and the belly white, and ſmoother than in other parts. The eyes are in the ſhape of a boat, and covered with a double membrane. The mouth is placed juſt under the eyes, and is armed with a double row of ſmall teeth. The two back fins have ſtrong, ſharp ſpines or prickles ſtanding before them, of which that neareſt the head is thicker and longer, and that neareſt the tail ſhorter and leſs. It has not any fin on the lower part of the body between the vent and tail; by which it may be diſtinguiſhed from all fiſh of this kind. It brings forth its young alive, which are produced from eggs hatched within its body. It is frequently taken in the *Britiſh* ocean, and in the *Iriſh* ſea.

The

B M


Monk-Fish?
23
Sword-Fish?
43
Saw-Fish.
19
Balance-Fish.
18
Shark?
16

The SMOOTH DOG-FISH has no teeth; but, inſtead of them, the bones of each jaw are as rough as a file. The ſkin is ſmooth, whereas in all others of this kind it is rough, and by that mark may be readily diſtinguiſhed from the Picked dog-fiſh.

The TOPE, ſo called in *Cornwall*, differs from the preceding fiſh in ſize, for it is much larger; and in having a great number of teeth. The eyes have ſmaller pupils, in proportion to the bulk of the body, and the ſnout, ſo far as it runs beyond the noſtrils, is tranſparent.

The GREATER CAT-FISH, called in *Cornwall* the BOUNCE, differs from Dog-fiſhes in having a broader back, and a ſhorter and blunter ſnout, reaching but a little beyond the mouth. It is all over ſpeckled with reddiſh black ſpots; but the ſkin is much rougher. It is often met with in the *Britiſh* ſea.

The GREATEST CAT-FISH differs from the Bounce, in being of an aſh-colour, in having larger and fewer ſpots, with a longer and thicker ſnout, and the noſtrils are at a greater diſtance from the mouth. The fins at the vent are not joined together as in the Bounce, but are diſtinctly ſeparated; likewiſe, the fin beneath the vent is nearer to it than in the Bounce.

The SAW-FISH has its name from a ſaw, which the bone of its noſe is ſuppoſed to reſemble; but they are more like the teeth of a comb, placed at ſome diſtance from each other. They are from twenty to thirty in number, placed on each ſide the bone, and are in ſome five feet in length when the body of the fiſh is ten feet. On the back it is of an aſh-colour, and the belly is white; and there are no teeth in the mouth, which is tranſverſly cleft like that of the Balance-fiſh; but the lips are as rough as a file. There are two fins on the back, and that next the head is like the Buts-kopf's; and that towards the tail is hollowed like a ſickle. On the belly there are four fins, two on each ſide; and thoſe next the head are broadeſt and longeſt; thoſe next the tail are placed directly under the uppermoſt fin on the back; and the tail is widened behind and before; but it is not divided into two parts. The ſhape ſomewhat reſembles a man's naked arm, and the noſtrils are oblong.

long. The eyes ſtand high out of the head, and the mouth is directly underneath the eyes.

The Saw-fiſh are great enemies to the Whale and Fin-fiſh; for many of them will gather about one, and never leave him till he is killed. They are fond of nothing but his tongue, for they leave all the reſt behind. When ſeamen and ſailors happen to ſee this fight, they never offer to intermeddle, but let them alone till the Whale is conquered; for, ſhould they do otherwiſe, their long-boats would fright the Saw-fiſh away, and then the Whale would make his eſcape. Though they inhabit different parts of the ocean, they are in greateſt plenty in the North ſeas; perhaps becauſe there are the greateſt number of Whales.

CHAP. IV.

Of Flat-fiſh of the griſtly kind.

THE SEA-EAGLE has a head almoſt like that of a toad, and the eyes are large, round, and prominent. The ſides are expanded like wings, and the tail is long and ſlender, being ſometimes above two ells in length. It is armed with a long ſharp weapon; and the body, in bigneſs, exceeds a Fire-flaire. The weapon is not leſs dangerous than that of the Fire-flaire, being greatly dreaded by fiſhermen. The mouth is full of teeth, and the ſkin is ſoft and ſmooth; the upper part being livid, and the under white. They are generally taken ſmall; but ſome of them have been found to weigh 300 pounds. It may be diſtinguiſhed from other griſtly fiſh by the length of its tail, and by its large weapon or ſpine, which is ſometimes ſingle, and ſometimes double, but always venomous. It is an inhabitant of the *Mediterranean* ſea, and is often brought to *Rome* and *Naples*. The fleſh is ſoft and moiſt, with a rank nauſeous ſmell, and therefore is ſeldom or never eaten.

The FIRE-FLAIRE differs from other griſtly fiſh of this kind, in having a remarkable weapon-ſpine on its tail;

Butterfly-Fish.
70
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Sea Bat?
21
Skate?

BRITISH MUSEUM
30
72
MAR

tail, of the length of a man's middle finger, which is ſtiff, exceeding ſharp, and notched like a ſaw; and the teeth bend backwards. The tail is remarkably long, and the head flat and depreſſed, like the body. The eyes are in the upper part of the head, and the mouth in the lower. There are two apertures, or holes, behind the eyes; that is, on each ſide one; and the eyes themſelves are large. The mouth is large, and placed tranſverſly, and the ſnout is long and ſharp at the end. The apertures on the gills are five on each ſide, beginning a little below the mouth, and ending on the breaſt. The ſides are terminated, throughout their whole length, by a broad fin.

The WHIP-RAY has a large broad body, almoſt of a triangular ſhape; and on each ſide there is a broad fleſhy triangular ſkin. The head is of the ſize of that of a middling hog; but it is thick, compreſſed, and has a ſort of pit in the middle. The mouth, inſtead of teeth, has a great many ſmall bones: the eyes are ſmall, and the upper part of the body is of an iron grey, almoſt blue, with white ſpots throughout; the lower part is white. The ſkin is ſmooth; and behind the tail there are two hooks like fiſhing-hooks, placed one upon another, and near three inches long.

The SKATE, or FLAIRE, is remarkably large, and ſometimes weighs above one hundred pounds; but, what is ſtill more extraordinary, there was one ſold, by a fiſhmonger, at *Cambridge*, to *St. John*'s college, which weighed two hundred pounds, and dined a hundred and twenty people. The length was forty-two inches, and the breadth thirty-one. The colour on the upper part is aſh, thickly ſpeckled with black ſpots; and the belly is white, which is likewiſe interſperſed with ſmall black ſpots. It has but few prickles, there being one row of them upon the tail; and the males are diſtinguiſhed from the females by having ſeveral rows of crooked prickles on both ſides the broad part of the fins.

All fiſh of this kind are more rank, when firſt taken, than when they have been kept for two or three days. The winter is the proper ſeaſon to feed upon them: for then the ſmell is not ſo ſtrong, and the taſte is more agreeable.

The

The THORN-BACK differs from the former in being leſs, and in being armed with a greater number of prickles, from whence it has its name: one ſingle row only runs down the back, but on the tail there are three. The ſhape, except the tail, is nearly ſquare, and yet a tranſverſe line, drawn from corner to corner, is longer than another drawn from the head to the root of the tail; ſo that in ſome ſenſe the fiſh is broader than it is long. One of theſe, being meaſured, was found to be ſixteen inches and a half broad, and only twelve long, the tail excepted.

This fiſh has no ſcales, but is covered with a ſort of ſlime, which renders it very ſlippery. The upper part is of a duſky colour, ſpeckled with round white ſpots; and the under part is entirely white. The row of prickles, or thorns, on the back, are about thirty in number, and on each ſide the tail, beſides that in the middle, there are two rows of prickles; but the lower part of the tail is ſmooth. The eyes are placed on the upper ſide of the head, being very prominent, and having no bone, or any thing elſe to defend them; only, on the inner ſide, there are ſmall prickles. The pupils have round, jagged covers underneath the horny coat, which are let down from the upper part of the eye; and near the eyes there are two holes, which ſome think ſerve for hearing, if it be true that any fiſh hear at all; for this is a matter ſtill in diſpute.

When a Thorn-back is laid with the belly uppermoſt, the noſtrils appear in ſight, being contiguous to the mouth, which is void of teeth; but the jaw-bones are as rough as a file. The gills, as in other fiſh of this kind, are five holes, placed in a ſemicircular form; and on the belly there are two ſemicircles, one of which encompaſſes the breaſt, and the other the lower belly, which is divided from the upper by a bone where theſe circles touch.

The prickles of the Thornback are not always diſpoſed in the ſame manner; for in ſome they are more numerous, and others have thorns on the belly. The fleſh is much like that of a Skate, but not quite ſo pleaſant, and more hard of digeſtion; however

the

the liver is accounted by ſome a great delicacy. Both the Skate and the Thornback are very common in all parts of *England*.

The SHARP-SNOUTED RAY is of a more ſlender make than the Flaire, and is brown on the back, and white on the belly. Some of them weigh upward of ten pounds, and have teeth in the mouth. The ſnout is ſlender, and pretty long, terminating in a ſharp point like the end of a ſpear, by which it is eaſily diſtinguiſhed from other fiſh of this kind. There are ſpines or thorns on each ſide the tail. Theſe fiſh are expoſed to ſale in the markets at *Rome*.

The MONK, or ANGEL-FISH, is of a middle nature, between a Shark and a Skate, and grows to a large ſize, often weighing above one hundred and ſixty pounds, and to the ſize of a man. The colour, on the back and ſides, is of a duſky aſh, and the belly is white. The mouth is broad, and placed at the end of the head, in which it differs from other flat griſtly fiſh. The head is roundiſh at the extremity, and there are three rows of teeth in each jaw, each row conſiſting of eighteen, ſo that there are an hundred and eight teeth in all; however, the number is not exactly the ſame in all fiſh of this kind. The tongue is broad, and ſharp at the end; and the noſtrils are wide, being placed on the upper-lip, and filled with a ſort of ſlime. The eyes are of a middle ſize, placed not far from the mouth, and do not look directly upwards, but ſideways. Inſtead of gills, it has five holes like the Thornback. The two fins, which are placed near the head, look very much like wings; for which reaſon it is called the Angel-fiſh, becauſe Angels are painted with wings. On the extremities of theſe fins, near the corners, there are ſhort, ſharp, and crooked prickles. The lowermoſt fins, which are placed near the vent, have alſo the like. Below the vent there are two fins on the back, and the tail is forked. The fleſh is ſo rank, and of ſo diſagreeable a taſte, that it is neglected even by the pooreſt people; but the ſkin is in great requeſt for making caſes for inſtruments and the like. This fiſh is to be met with in all parts of the

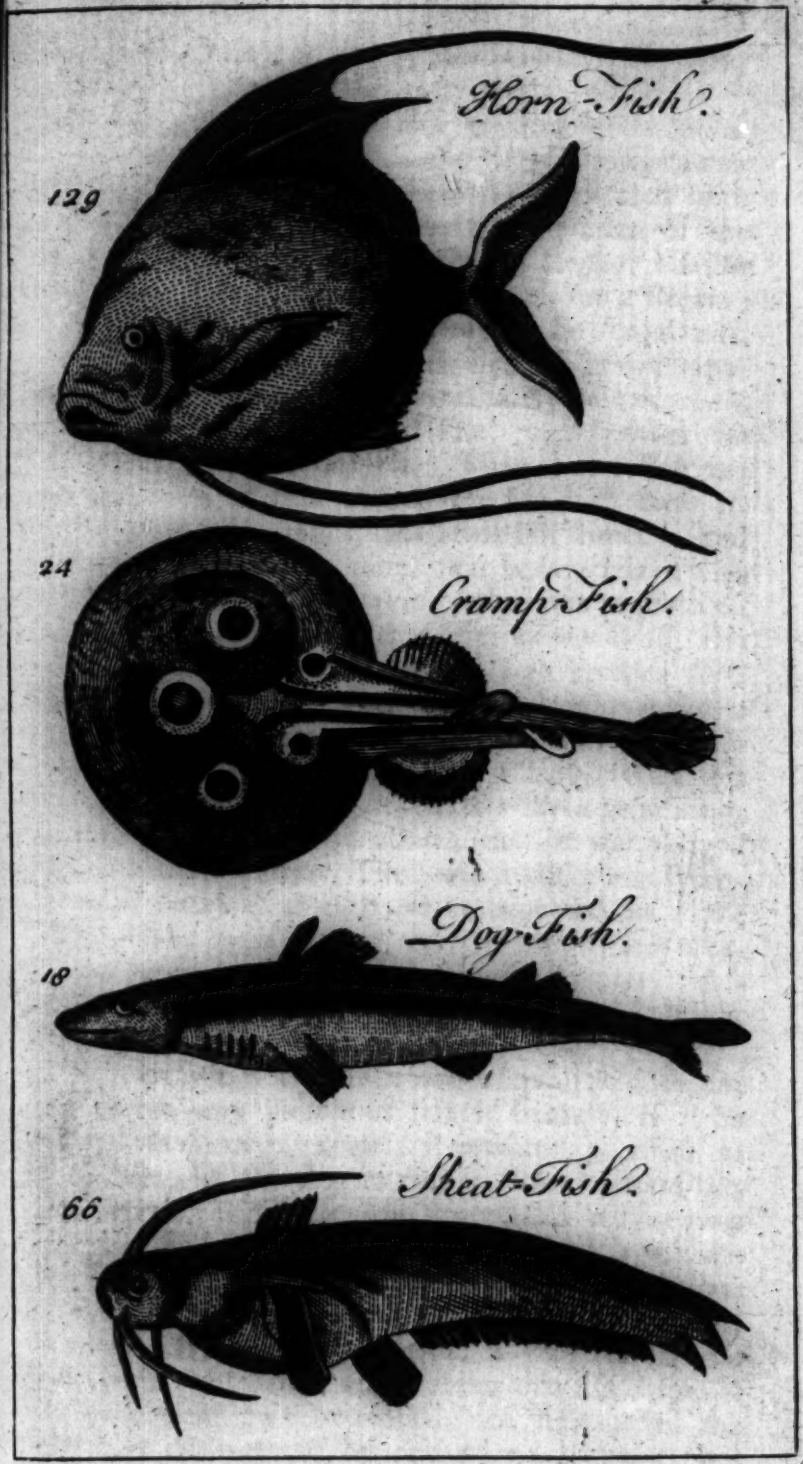
ocean, and is frequently taken on the coaſt of *Cornwall*.

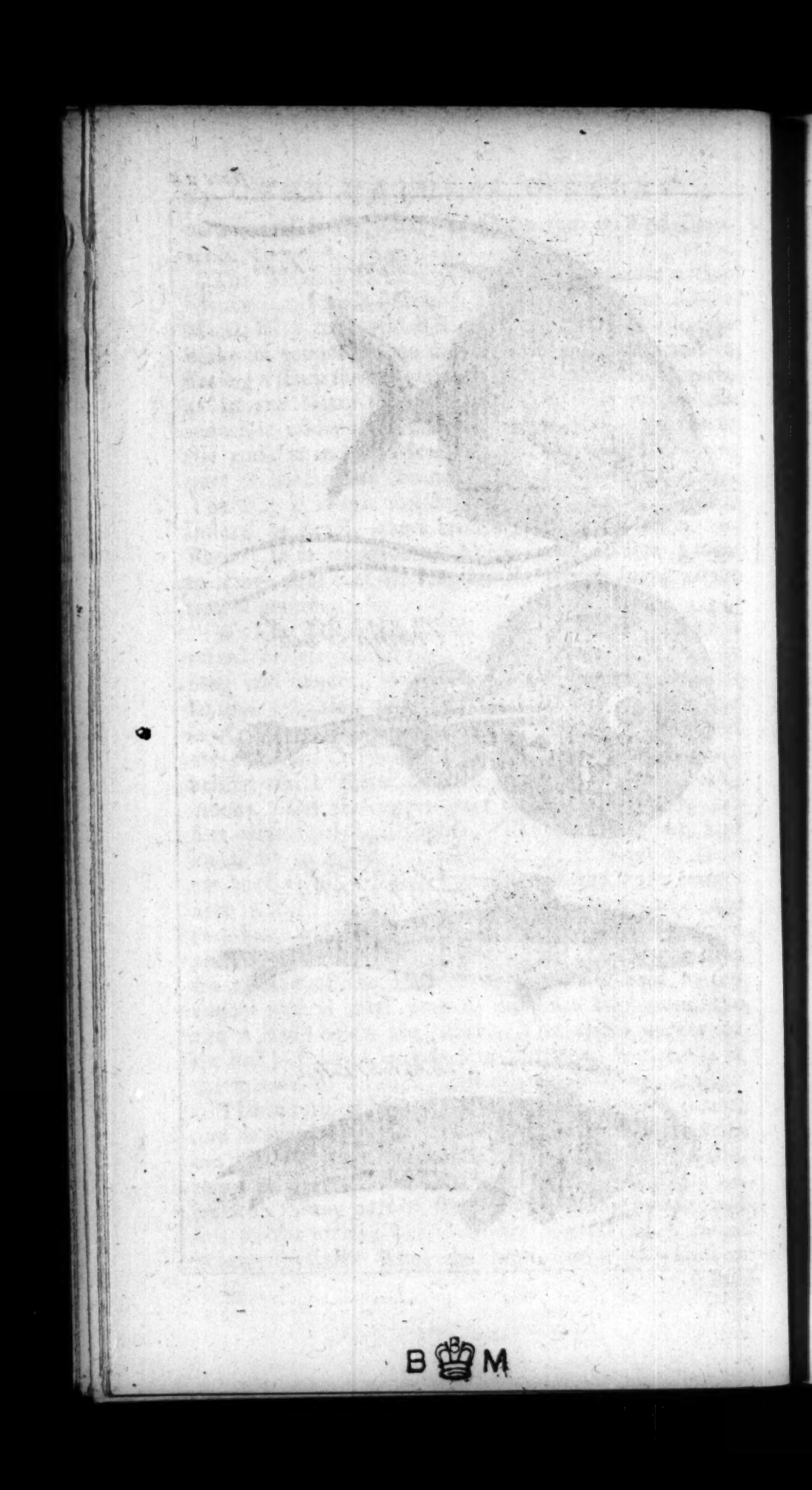
The MONK RAY ſeems to be of a middle nature between a Monk-fiſh and a Ray, but more like a Monk-fiſh; from which it differs in being of a longer make in proportion to the bulk of the body, and in having a ſharp ſnout, which extends beyond the mouth, as in the Sharp-ſnouted Ray. For this reaſon the mouth is under the ſnout, as in Dog-fiſh, and not at the end, as in the Monk-fiſh. Likewiſe, the lower part is flatter and broader than in the Monk-fiſh. The ſkin is rough and duſky in the upper part; and, inſtead of teeth, there are roughiſh tubercles as in Rays. It is common at *Naples*, and ſeldom grows to above four feet in length; the weight being about twelve pounds.

* The CRAMP-FISH, or TORPEDO, is of a round or circular ſhape, except the tail, which is long and ſlender. It is of no extraordinary bulk, it ſeldom weighing above ſixteen pounds. The colour is of a dirty yellow, like that of ſand or gravel; and the eyes are ſmall, being almoſt covered with ſkin; behind which there are two holes, ſhaped like half-moons. On the upper part of the body there are five remarkable black ſpots. The head is broad, and joined to the body, for which reaſon it ſeems to have no head at all. The extremities of the body terminate in fins; and a little above the vent there are two fins, which have two appendages that ſerve for a penis, as in the reſt of this kind. Below thoſe in the middle of the back or tail, for it is hard to ſay which term is moſt proper, there are two more, the one a little below the other. The upper corner of the tail is a little longer than the other, ſomewhat in the manner of a Shark, and other fiſh of that kind.

The mouth of a Cramp-fiſh is like that of a Skate, and is furniſhed with ſmall ſharp teeth; the noſtrils are placed near the mouth, and, inſtead of gills, there are five holes as in Thornbacks. There are no prickles in any part of the body, it being ſmooth and ſoft to the touch; but there are a great many ſmall holes, eſpecially about the head, through which a

ſlimy


Horn-Fish?
129
24
Cramp-Fish.
Dog-Fish.
18
Sheat-Fish?
66


B M

ſlimy liquor is ſecreted, that renders the body ſlippery, and defends it from the ſharpneſs of the ſalt water.

The moſt remarkable quality of this fiſh is to ſtupify, or benumb the hand of the perſon that touches it, to ſuch a degree that it ſeems to be affected with the cramp; from whence it derives the name of the Cramp-fiſh. Captain *Jobſon* being at *Caſſan*, a ſailor caught one of theſe fiſh, which he took for a Bream; but, as ſoon as he had touched it, he cried out, that he had loſt the uſe of his hand. His companions laughed at him, and immediately one of them trod upon it with his naked foot, upon which the whole leg became motionleſs. Then they called the cook, and deſired him to take the fiſh and dreſs it. He took it in both hands, but let it fall directly, and declared, in a mournful tone, that he was ſeized with the palſy. However, a negro, who was acquainted with this fiſh, told them, that after it was dead, this benumbing quality would ceaſe. The famous *Redi* ordered one to be caught, that he might make a trial of the numbing quality. He had no ſooner touched this fiſh, but he found a tingling in his hand, arm, and ſhoulder, attended with a trembling, and ſo acute a pain in his elbow, that he was obliged to take his hand away. The ſame troubleſome ſymptoms were renewed as often as he repeated the trial; however, they grew weaker and weaker till this creature died, which was in about three hours time. After it was dead this quality was quite loſt, and it might be handled as ſafely as other fiſh.

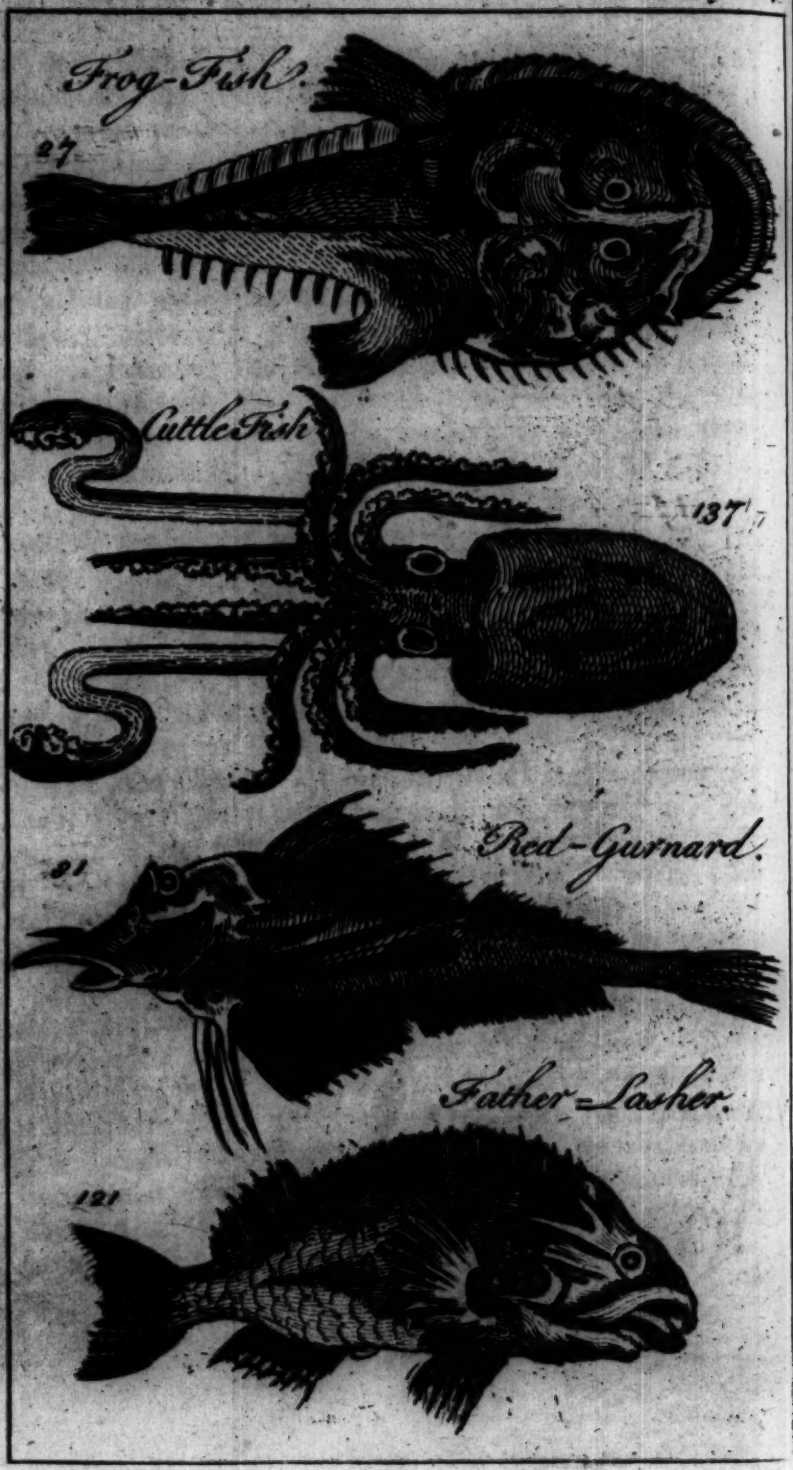
Borelli imagines the ſtupefactive quality does not proceed from any poiſonous ſteam, becauſe, if it be touched, when entirely at reſt, it produces no effect at all; beſides, if the fingers compreſs the extremities of the ſides ever ſo ſtrongly, the hand receives no damage at all; but if the hand is laid upon the fleſhy part over the back-bone, the violent vibrations of the fiſh will ſtupify it, and affect it with a ſort of cramp. He likewiſe obſerved a very remarkable difference in the manner of touching this fiſh; for, if his fingers were quite extended, and he touched the fiſh lightly with them, he received no damage; but

if they were bent, and the knuckles laid upon it, eſpecially the joint of the thumb, then the ſtrong vibrations produced a cramp. From hence he concluded, that the tendons, and nervous ligaments of the joints, being exquiſitely ſenſible, were very much affected with the violent and repeated ſtrokes of the fiſh, which produced a cramp, in the ſame manner as a blow upon the elbow. However, Mr. *Reaumur* affirms, he could never procure any ſuch trembling or vibration of the fiſh that *Borelli* ſpeaks of; and he is confident, the numbneſs proceeds from the velocity of one ſingle ſtroke, which is equal to that of a muſket-ball. Accordingly, a perſon, who feels this pain, imagines his fingers are affected with a violent ſtroke. As a proof of this he informs us that, before the fiſh gives this ſtroke, he draws up his back quite round, which was before depreſſed and flat.

The fleſh of this fiſh is ſeldom or never eaten, as being very unwholeſome; for it is moiſt, ſoft, fungous, and of an ill taſte.

The AMERICAN CRAMP-FISH is one foot nine inches long, and nine inches broad, having fins on each ſide like a Ray. The head ends in the ſhape of a cone; and the mouth is on the under part, and void of teeth. The fore part of the body, to the length of eight inches, is in the ſhape of a heart; but the remaining part is roundiſh, and only a little depreſſed. The number and place of the fins agree with other griſtly fiſh of this kind. It is covered with a ſoft ſkin of the colour of glue on the upper part, variegated with duſky and whitiſh blue ſpots. The fore part underneath is white, and the hinder of a fleſh colour, mixed with white. If it be touched in the middle, it cauſes the joints to tremble.

B M


Frog-Fish.
27
Cuttle Fish
137
Red-Gurnard.
91
Father-Lasher.
121

CHAP. IV.

Of irregular Fiſh, akin to thoſe of the griſtly kind.

THE FROG-FISH, or TOAD-FISH, ſeems to be of a middle nature, between the griſtly and the bony; but it more probably belongs to theſe, becauſe it generates in the ſame manner. The head is rather bigger than the reſt of the body, and is of a round or circular ſhape. The mouth is exceeding large, and inclines a little to the upper part of the head, like that of the Star-gazer. On the head, near the corner of the upper jaw, there are two long ſtrings, which this fiſh is ſaid to make uſe of as anglers do fiſhing lines. Both the jaws are armed with long ſharp teeth; and there are alſo teeth in the palate, and at the root of the tongue, which is large and broad. The back is flat, and of a grey colour, with ſomewhat of a reddiſh and greeniſh caſt. On the middle of the back, there are three briſtles or ſtrings, that ſeem to be in the room of a fin; and round the circumference of the body, there are ſeveral ſtrings hanging in the manner of fins. On the lower part of the body, under the throat, two fins are placed, which reſemble the feet of a mole; by the aſſiſtance of which they creep at the bottom of the ſea. The fleſh of this fiſh is white when boiled, and has the taſte of that of a Frog.

The AMERICAN TOAD-FISH is very ſmall, being but four inches long, from the tip of the ſnout to the end of the tail. The mouth is large, and armed with exceeding ſharp teeth; but the eyes are ſo ſmall, that they are no bigger than a grain of millet. Between the eyes and the middle of the forehead, there is a horn which ſtands upright, only it bends a little backwards; and before it there is a ſlender thread, about half an inch long, hanging forwards, which it can draw back, and hide within a pit on the top of the head. In the middle of the body, on each ſide, there is an arm with one joint, which terminates in a fin armed with prickles, which

run through the length of it, and are like eight ſharp nails: it has no ſcales, but is covered on the belly with a ſoft ſkin; though on the other parts it is rough. The colour is of a dark red, waved with black ſpots.

CHAP. V.

Of Fiſh produced from Eggs, which are generally bony, and have Spines in the Fleſh.

THE TURBOT, ſo called in the ſouthern part of *England*, but in the northern a BRETT, is the largeſt of all this kind, the Holibut excepted, though it ſeldom exceeds a yard in length, or two feet and a half in breadth. It has no ſcales, but a rough ſpotted ſkin, full of exceeding ſmall prickles, placed without order, on the upper part of the body, where the colour is aſh, and diverſified with a great number of black ſpots; ſome of which are large, and others ſmall. The lower part is white. At the roots of the fins, about the circumference, there are no prickles.

The mouth of a Turbot is proportionably wider than that of the Plaice, and has a greater number of teeth, both in the jaws and on the palate. The noſtrils are not placed in the ſame line with the back-fin, but below it; and the eyes ſtand on the right ſide of the mouth. There is likewiſe a greater diſtance between them, and they are farther from the back than in others of the ſame kind. It is taken very frequently in the *Britiſh* and *German* ocean; and the fleſh is white, firm, delicate, and wholeſome, being much preferable to that of any other flat fiſh.*

The

* The *Dutch* have entirely monopolized the Turbot fiſhery, there being hardly any taken by our own people, though they are in the higheſt perfection on the coaſt of *Cornwall*: thirty thouſand pounds are ſaid to be cleared annually by this ſingle article. All the laudable efforts of the Society for the Encouragement of Arts, &c. have not yet been able to awaken us to a ſenſe of our own intereſt.

The PEARL, ſo called by the *Londoners*, but, by the inhabitants of *Cornwall*, LUG-A-LEAF, differs from others of this kind, in having a ſcaly body, and from a Plaice in the prickles which ſurround the roots of the fins; in having the eyes on the right ſide, to the left of the mouth; and the back-fin, on this ſide the eyes, ariſing near the mouth, and running almoſt to the tail. Beſides, at the beginning of the fin, which is placed behind the vent, there is no prickle; and the diſtance of the eyes is greater than in a Plaice. The body is of an aſh colour, and the tail is round; but in moſt other things it reſembles a Turbot.

The PLAICE is on the upper part of a dirty olive colour, or brown, and ſpeckled with round red ſpots, of which there are ſome alſo on the fins. There is no roughneſs at the roots of the fins, and the ſcales, if any, are exceeding ſmall, and lie in round cavities. The eyes are on the right ſide, to the left of the mouth; and, at the upper edge of the coverings of the gills, there are ſeven bony tubercles or warts; the fifth, from the eyes, being higheſt and largeſt. There is one row of teeth in both jaws, and a cluſter of teeth on the palate. One of the noſtrils is ſeated on the upper ſide near the eyes; and the other on the lower ſide under the eyes; likewiſe the tail is long, and roundiſh at the end. Some of theſe fiſh have grown to the length of a foot, and to the breadth of ſeven inches.

The DAB is a little thicker than a Plaice, but much of the ſame ſize. They have pretty large ſcales, which are rough on the edges, in which it differs from a Plaice, as well as in not having any tubercles near the head, nor red ſpots. But the ſituation of the eyes is like that of a Plaice, and the colour, on the upper part, is of a dirty olive, with a reddiſh caſt, and ſome ſpots of a duſky yellow. The mouth is of a middle ſize, and has a row of teeth on each jaw. Some prefer the fleſh of this fiſh to that of a Plaice, it being much firmer.

The FLOUNDER, FLUKE, or BUT, is in ſhape like a Plaice, only the body is a little longer; and when full grown it is thicker. The olive-colour is

more dirty, and ſometimes brown with duſky ſpots; for they are not red as in a Plaice; however, they have ſometimes been obſerved to be yellowiſh, as well on the body as the ſurrounding fins. In the upper part of the ſurrounding fins there is a row of prickles, which bend backwards; and the eyes are on the right ſide, to the left of the mouth. The ſcales are exceeding ſmall, and ſtick ſo cloſe to the ſkin, that it does not appear to be rough. The lateral line is compoſed of ſmall prickles, from whence ariſes the roughneſs that may be felt along it, from the head to the tail. The mouth is ſmall, the tongue narrow, and there is a row of teeth in both jaws. *

CHAP. VI.

Of Flat-fiſh, with longer Bodies.

THE HOLIBUT, or HALIBUT, called in the north of *England* a TURBOT, is the largeſt of all flat-fiſh in theſe parts of the world, for it greatly exceeds a Turbot, and is of a longer make. One of theſe fiſh being meaſured was found to be a yard long,

* The Flounder is an inhabitant of the ocean as well as of rivers, and very excellent ones are taken in the *Thames*, and in the rivers of *Eſſex* and *Surry*. The proper places to ſeek for them are in the ſides of ſand-banks, or on gravel, eſpecially if there be a deep declivity. The tail of mill-ſtreams, the ends of other ſtreams, and deep ſtill places, are haunted by them; but they are never ſeen where there is mud. Small red-worms, the bluiſh marſh-worm, gentles, and waſps, are proper baits; and the ground ſhould be likewiſe baited with a handful of either cut in pieces. They ſpawn from *June* to the middle of *July*; but are in ſeaſon all the reſt of the year. From *April* to *Auguſt* they will bite all day long. The beſt way to fiſh for them is to lie upon the grabble, which is done by ſinking the line, by means of a leaden plummet at the end of it, when the hook-line will play in the water. Another method is, to throw in a long line, with ſeveral hooks upon it, placed a yard diſtance from each other, and properly baited with lob-worms and ſmall fiſh, taking care to have a lead at the end of the main line to ſink it. If a float is uſed, let it lie flat on the ſurface. When, after moving along ſlowly, it ſtands upright, then is the time to ſtrike. Let your hook be very ſmall, and take time in ſtriking.

long, and about half a yard broad; but there are many of a much larger size. The colour of the upper part of the body is of a dusky green or blackish, and the scales are small. There is no roughness thereon, nor are there any prickles at the roots of the fins. The eyes are placed on the right side, or to the left of the mouth. The fins are at a greater distance from the head than in other Flat-fish. It has a double row of teeth in the upper and lower jaw, which are a little crooked at the ends, and very sharp. The tongue is very stiff, and at the bottom there are two places full of a great number of small sharp teeth; there are likewise very sharp prickles on the gills. It is an inhabitant of the *German* and *British* ocean, as also of the *Irish* sea.

The SOLE is a longish flat-fish, in shape like the sole of a shoe, from whence it has its name. It sometimes is found to exceed twelve inches in length. The upper part is of a dark ash-colour, and the lower white; and it is covered with rough scales. The lateral line passes directly from the head to the tail, through the middle of both sides. The corners of the mouth are rough, with a sort of small bristles or hairs; and the body is surrounded with short fins, which on the upper edge begin near the eyes, and are continued to the tail. The eyes are small, round, and covered with a loose skin; the pupils are of a shining green; and the tail is round.

CHAP. VII.

Of Fish of the Eel kind, that want the bel'y-fins.

THE MURCŒNA is by the writers of *English* dictionaries called a Lamprey, but very improperly; however, we have no *English* name for it. The body is broader and flatter than that of an Eel, with a longer sharp and flat snout. The colour is a mixture of blackish-yellow and gold colour; and the mouth opens exceeding wide. At the end of the snout there are two short hollow appendages; and above the eyes there are another pair, that are thicker but shorter. The eyes

are ſeated in the upper jaw, in the ſpace between the end of the ſnout and the corners of the mouth. A fin riſes not far from the head, in the middle of the back, and is continued to the tail.

LAMPREYS, in general, have a round or oval mouth, with a hole or pipe on the top of the ſnout, as in thoſe of the Whale kind. There are ſeven holes on each ſide, which ſerve inſtead of gills, where there are no fins, nor yet on the belly: by which they are diſtinguiſhed from all other fiſh of this kind; that is, the long and ſlippery.

The LAMPREY, or LAMPERN, or *Pride of the Iſis*, is brown or livid on the back; and the belly is of a ſilver colour. It is about five or ſix inches in length, with a round mouth, furniſhed with ſix or ſeven teeth.

This fiſh has not ſo much as a back bone. The time of ſpawning is in *April*. There are two fins on the back, the hinder of which joins to the tail, and to the fin behind the vent. There are great numbers of this fiſh in the river *Merſey*, that runs between *Cheſhire* and *Lancaſhire*; there are alſo ſome in the *Iſis*, a river near *Oxford*. *

The LAMPREY-EEL is ſometimes three yards in length; the body about the gills is near fourteen inches in circumference; and the ſkin is of a blackiſh colour, marked with pale angular ſpots. The mouth is round, with which it adheres to a piece of wood, ſtone, or any other ſubſtance, as if it was ſucking it, and cannot be parted from it without difficulty. The ſkin is tough, and yet they do not take it off to dreſs it. It has a hole in the head like the Lampern, and there are ſeven holes on each ſide of the head, under which the gills are concealed. On the top of the head there is a white ſpot, and the edge of the mouth is jagged; the teeth are placed within the mouth, and thoſe that ſtand fartheſt backwards are largeſt. It has no bones but a griſtle down the back full of marrow, which ſhould be taken out before it is dreſt. In ſhort, they reſemble a Lampern in all things.

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* This little fiſh is conſidered by anglers as a good bait for Eels.

The BLIND LAMPREY is round and ſlender, and not much bigger than our large Worms, uſually called Dew-worms and *May* worms. It has no ſcales, and its body is divided into ſmall rings, by tranſverſe lines, in the manner of worms. The rings are about eighty-four in number, and the mouth is round and always open; but it has neither teeth nor tongue. There is a hole on the head, and ſeven holes on each ſide, inſtead of gills, as in the former. There is a YELLOW LAMPREY, which differs only in colour, but not in kind from the river Lamprey.

The EEL has a ſmall head, in proportion to its bulk, a little flatted before, but more round behind, with a long body a little flatted on the ſides, and principally from the vent to the tail. It is ſlippery, and ſeems to be without ſcales, becauſe they are not to be perceived unleſs the ſkin is dried; the lower jaw is longer than the upper, and there are four holes, namely two before, that is one on each ſide the end of the ſnout, and two backward, juſt before the eyes, which are the noſtrils. The eyes are placed on each ſide the head, and are round, ſmall, and covered with a thick ſkin that is a little tranſparent; the iris is reddiſh, and the pupil blackiſh, ſmall, and round. There are ſmall holes on both the jaws, which are about ſixteen in number on the lower, and many more on the upper. The membrane of the gills is ſuſtained on each ſide by ſix ſmall bones, or crooked ſlender ſpines, which do not appear outwardly on account of the thickneſs of the ſkin. There are ſeveral rows of ſmall teeth in the lower jaw, as well as in the upper; and a dentated bone on the fore part of the palate, which is longitudinally placed, and contiguous to the teeth of the jaws; there are alſo two ſmall oblong dentated bones, ſeated upwards, towards the throat, and as many downwards towards the gills, which are more oblong, and leſs dentated. The tongue is ſmooth, but immoveable, and is ſupported in the middle by a hard bone. The gills have no opening, either upwards or downwards, but only on the fore part near the fins on the breaſt. It is only a ſmall hole, about a quarter of an inch in length, placed perpendicularly. The

back, the ſides, and the fins are of a blackiſh grey colour; but in ſome ſort of Eels, greeniſh, eſpecially when they are fat; and the belly is of a whitiſh yellow. The vent is nearer the head than the tail, and there are three fins in all, namely two on the breaſt near the gills, which are ſmall and blackiſh, and compoſed of eighteen or nineteen ſpines, of which thoſe on the edges are ſmall, and thoſe in the middle long and branched at the point. The back-fin is ſingle, and begins at a diſtance from the head, running almoſt round the body in length, and extending from the tail to the vent. It conſiſts of many ſpines forked at the end, and about a quarter of an inch long. The tail, or the extremity of the back-fin, is a little pointed.

Some authors divide Eels into four kinds, the Silver Eel, the Greeniſh or Greg, the Red-finned, and the Blackiſh Eel. This laſt has a broader, flatter, and larger head than the reſt, and is conſidered as the worſt; but whether theſe diſtinctions are eſſential, or accidental, will admit of a doubt.

With regard to the generation of Eels, authors are divided in their opinions; for *Ariſtotle* aſſures us, that he could find no difference of ſexes, nor yet any parts of generation; for which reaſon they have been thought by many to proceed from the putrefactions of mud on the ſides of ponds and rivers. *Pliny* talks much in the ſame manner, and affirms that, though there are neither male nor female, they will rub themſelves againſt rocks and ſtones, and by that means detach particles or ſcales from their bodies that quicken by degrees, and afterwards become ſmall Eels. Some maintain that they couple, and that at the ſame inſtant they ſhed a kind of viſcoſity, which, being retained in the mud, gives birth to a great number of the ſame animals; but, as we have no certain accounts, whereon may be grounded any kind of concluſion, we muſt leave this diſpute unſettled.

An Eel contains a great deal of oil, thick phlegm, and volatile ſalt, and thoſe are beſt that are taken in the cleareſt water. The fleſh is tender, ſoft, and nouriſhing, becauſe it is full of oily balſamic par-

ticles; but then it is hard of digeſtion, and is bad for thoſe that have weak ſtomachs; however, they are better when they are ſalted, becauſe the ſalt corrects the phlegm, and in ſome meaſure imbibes it. Eels are generally eaten boiled, but they are better broiled or roaſted, on account of their clammineſs; they ought likewiſe to be well ſeaſoned, and two or three glaſſes of wine ſhould be drank after to help digeſtion. But, let them be dreſſed which way they will, they are never very agreeable to weak ſtomachs, and are apt to cauſe obſtructions; but they will do no harm to thoſe of ſtrong robuſt conſtitutions, provided they are not eaten to exceſs. Some phyſicians pretend, that the fat of an Eel, put into the ear with a bit of cotton, will cure deafneſs; others uſe it to take away the ſpots of the ſmall pox, to cure the piles, and to make the hair grow. *

The CONGER, or SEA-EEL, is ſomewhat like the common Eel, that is, with regard to ſhape, but differs in ſize; for ſome Congers are ſeveral yards long, and as thick as a man's thigh; likewiſe, the colour on

* The uſual haunts of the Eel are in weeds, under roots and ſtumps of trees, in holes, and clifts of the earth, both in the banks and at the bottom, and in the mud, where they lie with only their heads out, watching for prey. They are alſo found under great ſtones, old timber, about flood-gates, bridges, and old mills: they delight in ſtill waters, though the ſmaller Eels are to be met with in all ſorts of rivers and ſoils. Eels may be caught with ſalt beef, a lob or garden worm, minnow, fowls-guts, and indeed with almoſt any bait. They are always in ſeaſon; but beſt in winter, and worſt in *May*. They bite beſt in a ſhower, after a thunder ſtorm, and in windy, gloomy weather. He is frequently caught in the night by laying night-hooks, baited with ſmall Roaches, the hook being in the mouth of the fiſh, as for Pike. He may be grabbled for in the manner already mentioned under the article of the Flounder, page 30. The beſt way of taking Eels, in dry hot weather, when the water is low, is by ſniggling, which is done in the following manner. Take an ordinary ſized needle, whip it, about the middle part, to three inches of fine ſtrong twine, waxed and faſtened above to ſeveral yards of packthread. Thruſt the end of your needle into the head-end of a large lob-worm, and draw him on till you have got to the middle of the worm; then, in the end of a ſmall long ſtick, which you may fix in a joint of your rod, let another needle be ſtuck, faſtened well to prevent ſlipping out, with half an inch of the point appearing. Put this alſo into the

on the back is lighter, being more of an aſh, and the belly is whiter. The eyes are larger in proportion, and the iris is of a ſilver colour; on the ſides there is a ſtraight, white, broadiſh line that ſeems to be compoſed of a double row of points, which reaches from the head to the tail. The fin placed on the body has its upper edge blackiſh throughout its whole length; add to this, that the end of the ſnout, or upper chap, is furniſhed with two ſhort horns or tubes, from which a liquor may be ſqueezed out. Some pretend the fleſh is as ſweet and good as that of an Eel; but this is not true, for the taſte is not ſo good by far, and it is much more hard of digeſtion.

The greateſt ſpotted *Indian* CONGER, called a KOMMER-EEL by the *Dutch*, grows to the length of a man, and is proportionably thick. The body and fins are ſpeckled with duſky ſpots.

The SAND-EEL, or LAUNCE, is a fiſh in the ſhape of an Eel, being round and long, but it ſeldom exceeds the length of a foot. It is blue on the back, and of a ſilver

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head of the baited worm, and holding the whole length of the cord in your hand, together with the ſtick, thruſt your worm into the hole where the Eel is, till you have loſt ſight of it: then draw your ſtick ſoftly away, laying it aſide, and keeping the line in your hand, till you perceive it to draw. After ſome time, ſtrike, and pull him out by degrees. The needle, which before this lay ſtraight in the worm, will by your ſtroak be pulled acroſs the throat of the fiſh, and hold him faſt. When he is landed, you may, by ſqueezing one of the points through his ſkin, draw the whole line after it, without the trouble found in diſlodging a hook. Bobbing is another method of catching Eels, which is done by ſtringing a bunch of worms, on a fine but ſtrong packthread, with a needle, running them on from head to tail, to the quantity of about a pound. Tie them faſt, in ſuch a manner, that they may hang in links, in form of a taſſel. Faſten theſe to a ſtrong cord, about two yards long, and about eight inches above the worms tie a knot. Let a plummet of lead, in the ſhape of a pyramid, and of about half a pound weight, reſt on this knot, the broad end downwards. Tie this cord to a ſtrong pole about three yards in length, and angle with it in deep waters, or at the ſides of ſtreams. When you find Eeels tug heartily at it, then draw up worms and Eels with a ſteady, ſwift, and even hand, and, by a ſudden jerk, ſhake them off on land, or into a boat. By this way you may catch three or four at a time. There are plenty of this fiſh, as is well known, in the river *Thames*, and in many other rivers in *England*.

ver colour on the belly and ſides. It has no ſcales, and has a ſharp ſnout, a wide mouth void of teeth, and the lower jaw is longer than the upper. On the back there is a long fin, which, however, does not reach to the tail; and there is a pair of fins at the gills, but there are none on the belly. They generally lie half a foot deep in the ſand, and when the tide is out the fiſhermen of *Cornwall*, and the *Iſle of Man*, ſearch for them with hooks made for that purpoſe. The fleſh is very ſweet and good, and it is an excellent bait for other fiſh. There is another ſort of Sand-eel, which differs from the former in having two fins on its back, whereas that has only one. However, this has only one pair of fins that are placed at the gills, and there are none on the belly, as in the former.

The SEA SERPENT is about five feet in length, and has a body exactly round, ſlender, and of an equal thickneſs, except near the tail, where it grows ſenſibly leſs. The upper part of the body is of a duſky yellow, like the dark ſide of parchment or vellum; but the lower part is of a brightiſh blue. The ſnout is long, ſlender, and ſharp; and the mouth opens enormouſly wide. Near the end of the lower jaw there are four or five large teeth bending inwards, but the reſt are ſo ſmall as hardly to be perceived. The upper jaw has likewiſe four large ones, and the reſt are as ſmall as in the lower. The eyes are little, of a gold colour, and ſpeckled with brown, and are covered with a thick tranſparent ſkin. It has only one pair of fins, which are placed at the gills; but there is a fin on the back, which riſes a little below the gill-fins, and reaches within an inch of the tail, but is not flat, as in an Eel, but round. The belly-fin, or that which is ſeated on the lower part of the body, begins at the vent, and ends about an inch on this ſide the tail. The holes of the gills are at ſome diſtance from the head, as in Eels. The fleſh is very well taſted and delicate, but is full of very ſmall bones, and therefore cannot be eaten without ſome trouble. It is taken very frequently in the *Mediterranean* ſea.

There are other Sea Serpents, diſtinguiſhed by the names of the Flat, the Spotted, and the Livid Sea Serpents; but thoſe, who have read the deſcription of the

the above, will eaſily, on inſpection, obſerve the difference.

The SEA-CRICKET is a fiſh of the Cod or Whiting kind; it is in ſhape like a Conger, though ſhorter in proportion, for it is only nine inches long; beſides it is flatter on each ſide, and of a lighter colour. It has four barbs or ſtrings under its chin, two of which proceed from one root, and two from another. The tail fins are black on the edge as in the Conger, and there are ſmall ſcales that are of an unuſual ſhape and ſituation; for they are narrow, longiſh, and do not lie upon each other as in other fiſh, but are diſtinct, and placed in no manner of order.

The SEA-WOLF has a ſmooth body, being without ſcales and very ſlippery. It is ſomewhat in the ſhape of an Eel; but is of a browniſh grey, and the ſides are adorned with blackiſh tranſverſe ſhades. The head is large, and flat above the eyes, and the cheeks ſeem to be ſwelled and puffed out. It is a moſt voracious fiſh, and will bite hard with its terrible teeth. The fin on the back, which runs from the head to the tail, has very ſoft rays, and there is another oppoſite to it, that runs from the vent to the tail. At the gills there are two roundiſh and large fins. It is taken in the ſea near *Yorkſhire* and *Northumberland*, and is ſometimes ſeen about a yard in length.

CHAP. VIII.

Of Fiſh that want the Belly-fins.

THE ORB, or SEA WEATHER-COCK, by ſome called the SEA PORCUPINE, has a roundiſh globous body, from whence it has its name. It can blow up its body much like a bladder, and is beſet with long prickles, eſpecially on the ſides, where the baſes of the prickles are divided into two other ſhort ones, and end under the ſkin. It differs from our Sea Porcupine in having the eye-brows placed higher, and in having the head more round; likewiſe, it is all over ſpotted, which ours is not.

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Prickly Orb.

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The PRICKLY ORB, or SEA PORCUPINE, of *South America*, has a mouth like that of a frog, and is above ſeven inches long. The head is broad, and ſpeckled with black ſpots, eſpecially near the gill fins. The prickles of this fiſh are of a flattiſh ſhape, whereas thoſe in the former are round: there are alſo broad duſky ſtripes, which run along the back.

To enumerate the various ſpecies of the Orb, as deſcribed by naturaliſts, would be endleſs, and indeed unneceſſary, ſince the deſcription of the above will always be ſufficient to enable the curious to diſtinguiſh fiſh of this kind from any other, and their own obſervations will point out to them wherein they differ.

The SEA HEDGE-HOG is covered all over with thick thorns or prickles, and has a head leſs prominent than the former, but the body is rounder and bigger. It ſwims very ſlowly, and conſequently would be an eaſy prey for other fiſh, if it was not ſo well armed with prickles.

It has no head, for the eyes and tail are fixed to the belly. Inſtead of teeth it has two hard ſmall ſtones an inch broad, which it makes uſe of to cruſh Sea-crabs to pieces, as well as ſmall ſhell-fiſh, on which it lives. It is all over armed with thick prickles about as long as the tags of laces, and as ſharp as needles, which it can raiſe upright, or lay down at pleaſure. In the middle of the belly there is a ſort of a bladder or bag filled with wind, of which they make exceeding good iſinglaſs or fiſh-glew. The other ſorts of Sea Hedge-hogs differ little from this, except in the ſituation and ſize of their prickles; for they are ſhorter in ſome and ſlenderer in others, and in ſome again they form a ſort of large ſtars. *

The

* This fiſh is taken by throwing a line into the water, at the end of which is a hook covered with a piece of Sea-Crab. When the fiſh has ſwallowed it, and wants to get away, finding itſelf ſtopped by the line, all the prickles are briſtled up; inſomuch that, when he is drawn on ſhore, it is impoſſible to lay hold on any part of the body: for this reaſon they drag it ſome diſtance from the water, where it dies in a ſhort time. Sometimes this fiſh is thicker than a buſhel, and yet there is no more fleſh fit for eating than is found on a ſmall Mackrel.

The SEA PIGEON has its name from its head, which is thought to be like that of a Pigeon, and its breaſt is alſo like that of a Cropper. It has ſcales, but there are ſpots on the ſkin of various figures. It is ſeldom caught, and has a diſagreeable taſte.

The TRIANGULAR HORNED-FISH, that has a long ſpine or prickle in the middle of the head which is covered with ſkin, is of a middle ſize, and is beautifully marked with pretty broad waved ſpots, of a duſky colour on the back and jaws. In many other triangular fiſh, that have horns on their heads, there are no ſcales on the top of the tail, but ſometimes there is a ſingle ſcale either on the upper or lower part, and ſometimes one on both. There are various other ſorts of this fiſh, that differ only in ſome few particulars, which, for the ſake of brevity, may here be very properly omitted.

The SEA HORSE, beſt known by the ancient name of HIPPOCAMPUS, never exceeds nine inches in length; and, in the head, ſnout, and mane, is ſomewhat like a horſe. It is about the thickneſs of a man's thumb, and the body is full of clefts and furrows. The ſnout is a ſort of a tube, with a hole at the bottom, to which there is a cover that he can open and ſhut at pleaſure. The upper part of the body ſeems to have ſeven ſides; but below the vent it reſembles a figure conſiſting of four ſides. The eyes are ſmall and prominent, and between them are two high tubercles. The tail ends in a point, and is generally very much bent. Behind the eyes, where the gills are placed in other fiſh, there are two fins which look like ears, and above them are two holes, but there are no gills neither outwardly nor inwardly. The whole body ſeems to be compoſed of griſtly rings, and on the intermediate membranes of which ſeveral ſmall prickles are placed. The colour is of a dark green, but towards the tail inclining to black. The belly is marked with ſpots of a whitiſh blue. It is taken in the *Mediterranean*, and alſo in the weſtern ocean.

The SEA HORSE WITH A MANE is four times as large as that without, and in the middle of the belly there is a ſmall fin or blackiſh membrane. From the top of the head and neck there are long hairs, which

hang down like a mane. The ſmooth Sea-horſe without prickles has but few furrows. The ſmall ſmooth Sea-horſe, with a great number of furrows, has thirty-five on the tail. It is found in the ſtraits of *Sunda* in the *Eaſt-Indies*. In the prickled Sea-horſe there are thirty furrows from the back fin downwards; and in the greater ſmooth Sea-horſe there are twenty-five, and in another thirty-five. Likewiſe, in the greater ſmooth Sea-horſe, there are a great number of blackiſh ſpecks or ſpots, whereas all the reſt are entirely without.

The SEA GOAT has a compreſſed head, with the eyes placed in the upper part. The mouth is ſmall, and in each jaw there are eight teeth, not ſerrated, but joined together like thoſe of mankind. There are four gills that have not a bony but a ſkinny cover. Almoſt in the middle of the back there are three very ſtrong and large prickles joined together by a membrane, of which that before is three times as big as the two others. This fiſh can raiſe them, or lay them down when he pleaſes, in a bony furrow made for that purpoſe; which particular ſeems peculiar to this fiſh. It is covered with ſcales which are not like thoſe of a fiſh, but rather of a Serpent; for beſides their being placed in ſuch an order, that the lines between them, interſecting each other, make a ſort of chequer work, they alſo ſtick ſo extremely faſt to the ſkin, that they cannot be ſeparated from it. The colour is of a duſky green, ſpeckled with blue; but the blackiſh fins of the back and belly are marked with blue and red ſpots. The ſhape is broad, very flat, and almoſt roundiſh; but it ſeldom exceeds two pounds in weight.

The GUAPERUA is a long fiſh, with a tail almoſt ſquare, and not forked, and the top of the head is broad. It differs from the former in having its teeth ſharpened in a peculiar manner, in having but two horns on its back, of which the firſt, in a dried fiſh, had a double row of pretty large teeth as rough as a ſaw. The top of the head is not ſo flat. The length of this fiſh is near ſixteen inches, and it is almoſt five broad. There are other ſorts of this fiſh; but the deſcription of this is ſufficient.

The

The BELLOWS or TRUMPET FISH is ſmall, near four inches long, and about an inch and a half broad. It is covered with rough ſcales, and has a long ſnout, for it is almoſt equal to one third of the length of the whole body. The eyes are large, and their iris is white: on the back there riſes a very ſtrong ſpine of a great length, to which there correſponds a furrow on the back part.

The PAMPUS, of Sir *Hans Sloane*, is the leaſt of its kind, being only ſix inches long, and four and a half broad in the middle part. It is roundiſh at the beginning, and from thence to the tail it grows gradually more ſlender. The tongue is round, fleſhy, and ſpotted; and the jaws are armed with ſmall ſharp teeth. The eyes are large, with an ample iris of a ſilver colour. There are four fins; one beginning on the middle of the back, and ending at the tail; the ſecond, oppoſite to this, runs from the vent to the tail; and at the gills there are two long ones, but there are none on the belly. The tail is forked, and two inches and a half in length; and there is an arched line running along the upper part of the ſide, which is ſtrait in the middle. It is covered all over with ſmall white ſcales. The belly is round, the bones ſharp, and beſet with teeth like wool-cards.

The RIBBAND FISH is pretty ſtrait along the belly. The back is roundiſh, and forms an edge along its ridge. It is ſix inches in length, and two in breadth where broadeſt, for near the tail it is little more than a quarter of an inch broad. It is much compreſſed ſideways, brown on the back, and of a lightiſh colour on the belly. It has a fin on each ſide the head, and a pair of fins beneath them, between the head and the belly. There is alſo a ſingle fin on the lower part of the belly near the vent. A long ſharp fin riſes from the higheſt part of the back, and behind that a narrow fin, which runs the whole length of the ridge of the back towards the tail. The fins and tail are of a duſky colour: there is a reddiſh circle round the eye, and a black ſpot between the noſtrils; there is alſo a broad black liſt running round the head and paſſing through the eyes, beſides two other black or duſky liſts bordered with white; the firſt paſſing a little obliquely

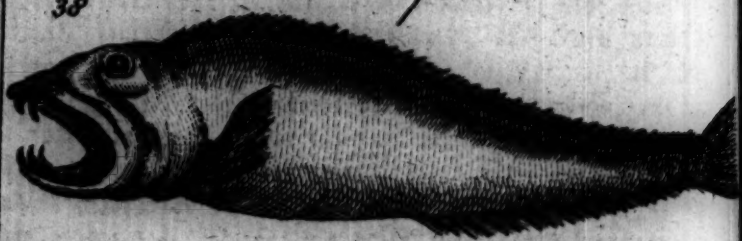
B M

17

Sea-Fox.

38

Sea-Wolf.

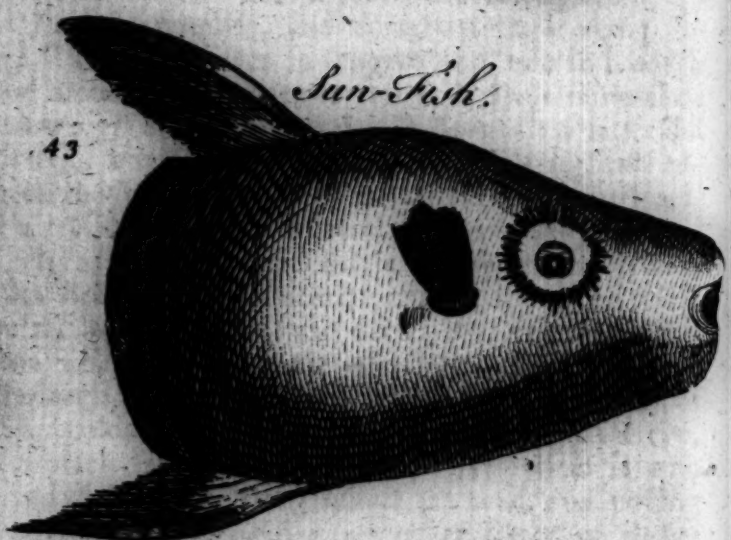


Tunny-Fish

51

Sun-Fish.

43



obliquely below the head, and the other from the long fin on the back quite through the tail, which makes this fiſh appear as if it were bound with ribbands. It is a *Weſt-Indian* fiſh, and was caught near the *Caribbee Iſlands*.

⁂ The SUN FISH has a broad ſhort body, which is covered behind with a circular fin that ſerves inſtead of a tail; ſo that it ſeems to be only one half of a fiſh, with the tail-part cut off. Its common length is about two feet, and yet it is found to weigh upwards of one hundred pounds. It has no ſcales, but is covered with a hard rough thick ſkin. The back is blackiſh, and the belly of a ſilver colour; but both belly and back terminate in a ſharp ridge. The mouth is very ſmall for the bigneſs of the fiſh, and when opened is roundiſh. The jaws are hard, rough, and ſharp, and ſeem to be armed with ſeveral rows of ſharp teeth. There are four holes in the head, beſides the noſtrils, which laſt are placed between the eyes and the mouth. The eyes are ſmall, and of a duſky yellow near the pupil; and about the circular fin, which ſurrounds the tail, there is a broad ſtripe, which makes it appear to be bound as with a fillet. There are two large fins near the back part, and two ſmall ones at ſome diſtance behind the eyes, but in the ſame line with the eyes.

It is called the Sun-fiſh from the roundneſs of its body, or perhaps becauſe it ſhines in the night. However, this quality does not belong to this fiſh alone. It is taken both in the *Mediterranean* ſea and in the ocean, as well as near *Penzance* in *Cornwall*.

⁂ The SWORD FISH may be eaſily known from any other by its ſnout, being in the ſhape of a ſword. It is fifteen feet in length, and two hundred pounds in weight. The body is long and round, and the head thick, but it grows gradually ſmaller towards the tail. The ſkin is very thin and ſmooth. The upper jaw terminates in a very long ſnout like a two-edged ſword; and the lower is exceeding ſharp at the end, making a very acute angle. The ſnout is one third of the whole length of the fiſh, and there is only one fin on the tail, which runs almoſt the whole length of the back. The tail is forked and almoſt in the ſhape

of

of a half moon, and has only one pair of fins at the gills. There are two fins on the lower part of the body near the vent, and the ſtomach is long, almoſt in the ſhape of a cone. *

CHAP. IX.

Of bony Fiſh, that have ſoft flexible ſkins on their backs.

THE COD-FISH, or KEELING, is about three feet long and upwards, and has different names from the different places, as well as from the different manner of curing it. Hence it is called *Green-fiſh*, *Iceland-fiſh*, *Aberdeen-fiſh*, *North ſea-cod*, *Stock-fiſh*, *Poor John*, and *Barrelled-cod*. Thoſe that are ſmall and young of this kind are called *Codlings*.

It is a thick round fiſh, with a large head, and a prominent belly. It is brown on the back, white underneath, and interſperſed with yellow ſpots. The ſcales are ſmall, ſticking cloſe to the ſkin, and the eyes are large, and covered with a looſe tranſparent membrane. It has a barb on the lower jaw, about an inch in length; and the tongue is broad, round, ſoft, and ſmooth. There are ſeveral rows of teeth in the jaws, one

* The Sword-fiſh is ſtill taken between *Italy* and *Sicily*, as it was formerly. Their cuſtom is to place watchmen on the high cliffs that hang over the ſea, whoſe buſineſs is to obſerve the motions of theſe fiſh. As ſoon as they perceive any, they give notice to the boats below, and, by ſigns before agreed upon, they direct them what courſe to take. As ſoon as they draw near them, a fiſherman, who is uſed to the ſport, climbs up a ſmall maſt placed in the boat for that purpoſe, to obſerve the fiſh he deſigns to ſtrike, at the ſame time directing the rowers which way to ſteer. When they have almoſt overtaken one, the fiſherman immediately comes down, and ſtrikes a ſpear or harpoon into his body, the handle of which, being looſe in the ſocket, parts from it, while the iron part, which is made faſt to a long cord, remains in the body: then the fiſh is ſuffered to flounce about till he is tired, and grows faint with loſs of blood. After this they either hoiſt him into the boat, or if he is very large tow him on ſhore.

one of which is longer than the reſt, and there are likewiſe teeth in the palate and in the throat.

The fleſh is exceeding good, and in high eſteem, and is greatly in requeſt when ſalted during the Lent-ſeaſon. Freſh Cod for immediate uſe is caught in the ſeas all round *Great Britain*; however, there are particular times for fiſhing in particular places; and they are to be found in greater plenty in ſome places, at ſome times of the year, than in others. Thus, from *Eaſter* to *Whitſuntide*, is the beſt ſeaſon at *Alanby*, *Workington*, and *Whitehaven*, on the coaſt of *Lancaſhire* and *Cumberland*; on the weſt part of *Ireland*, from the beginning of *April* to the beginning of *June*; to the north and north eaſt of *Ireland*, from *Chriſtmas* to *Michaelmas*; and to the north eaſt of *England*, from *Eaſter* to *Midſummer*.

But the chief ſupport of the Cod-fiſhery at preſent are the fiſhing banks of *Newfoundland*, which are a ſort of mountains covered with the ſea, where the water is much more ſhallow than in other places. One of theſe is called the GREAT-BANK, and well deſerves that name, for it is four hundred and fifty miles in length, and an hundred in breadth. It is about ſeventy five miles from the iſland called *Newfoundland* in *America*; and the beſt, largeſt, and fatteſt Cod are thoſe taken on the ſouth-ſide of the bank, for thoſe on the north-ſide are much ſmaller. The ſeaſon for catching them on this bank is from the beginning of *February* to the end of *April* and the beginning of *May*; for at this time the fiſh, which had withdrawn during the winter into deep water, return back and grow very fat. Thoſe that are taken from *March* to *July* will keep pretty well; but thoſe that are caught in *July*, *Auguſt*, and *September*, will ſoon be good for nothing, without a great deal of care. However, this fiſhing is ſometimes over in a month or ſix weeks, and ſometimes it continues ſix months.

When Lent begins to draw near, though the fiſhermen have caught but half their cargo, yet they will haſten homewards, becauſe the markets are beſt at that time; however, ſome will make a ſecond voyage, before others have got a ſufficient cargo for the firſt.

Each

Each fiſherman can take but one at a time, and yet thoſe who are expert at the buſineſs will catch from three hundred and fifty to four hundred in a day. They are all taken with a hook and line baited with the entrails of other Cod-fiſh, except the firſt. This is a very fatiguing employment, both on account of the heavineſs of the fiſh, and the coldneſs of the weather: for though the GREAT-BANK lies between forty and forty-eight degrees of latitude, which might be ſuppoſed to be a warm climate, yet the weather in the ſeaſon of fiſhing is generally very ſevere.

They ſalt the Cod-fiſh on board the ſhips in the following manner: they cut off the head, open the belly, and take out the guts, and then the ſalter lays them ſide by ſide, head to tail, at the bottom of the veſſel, for about a fathom or two ſquare; when one layer is compleated he covers it with ſalt, and lays on another, which he covers as before. Thus he diſpoſes of all the fiſh that is caught in one day; for care is taken not to mix thoſe of different days together. After the Cod has lain thus three or four days, they are removed into another part of the veſſel and ſalted afreſh. After this they are ſuffered to lie till the veſſel has procured its full cargo, or till they think proper to depart for their deſigned port. Sometimes they are put into barrels and packed up, and this is generally known by the name of Barrel-cod, which is accounted the beſt.

They do not always ſalt the Cod-fiſh, for they dry ſome on ſhore; and this they fiſh for along the coaſt of *Placentia* in *Newfoundland*, from *Cape Race* to the bay of *Experts*; within which limits there are ſeveral commodious harbours and places to dry the fiſh in. Thoſe who intend to dry their fiſh in the ſun always take them in the ſummer ſeaſon, that being the only time proper for that purpoſe. The fiſh that are choſen for drying are of a ſmaller ſort, which are more fit for their purpoſe, becauſe they ſooner take ſalt.

When the fiſhing veſſels are arrived at any particular port, he who gets in firſt is entitled to the quality and privilege of admiral, and has the choice of his ſtation, as well as of the ſtage which they make uſe of. As

ſoon

ſoon as they are got into a harbour they unrig all their veſſels, leaving nothing but the ſhrouds to ſuſtain the maſts. In the mean while the mates go on ſhore to provide tents, which are covered with branches of fir, and the ſails are laid over them. They alſo make a ſcaffold fifty or ſixty feet long, and twenty broad. While theſe things are preparing, the reſt of the crew are buſied in fiſhing, and as faſt as they catch any they open them, and ſalt them on moveable benches; but the main ſalting is performed on the ſcaffold. When the fiſh has taken ſalt, they then waſh them, and lay them in heaps on the galleries of the ſcaffold. This done, they afterwards range them on hurdles, only a fiſh thick, head to tail, with the back uppermoſt. While they lie in this manner, they take care to turn and ſhift them four times during every twenty-four hours. When they begin to dry, they lay them in heaps, ten or twelve together, to retain their warmth, and continue to enlarge the heap every day till it is double its firſt bulk. At length they make one heap out of two, and continue to turn them every day as before; but when they are quite dry they lay them in huge piles, as large as hay-ſtacks.

They not only ſalt the body of the fiſh, but their tripes and tongues, which are afterwards barrelled up, as alſo the roes; which laſt are of ſervice to throw into the ſea, in order to draw other fiſh together, particularly PILCHARDS. They alſo get an oil from this fiſh, which is uſed for dreſſing leather, and all the other purpoſes of train oil.

The WHITING POLLACK is larger than a common WHITING, but is pretty much of the ſame ſhape, only it is broader, and not ſo thick: the back is of a dirty green colour. It differs from a Cod-fiſh in being leſs; in being proportionably broader, and not ſo thick; in having a leſſer head, in wanting a barb, and in having the lower pair of fins much leſs.

The ſides beneath the lateral lines are variouſly ſtreaked with a duſky yellow, and the body is ſcaly, but the ſcales are very ſmall. The mouth is large, the teeth little, and the tongue is ſharp at the point. The eyes are of a ſilver colour and large, and the

lower

lower jaw is a little more prominent than the upper. He feeds upon fiſh, particularly Sand-eels.

The fleſh is of little uſe in medicine, though the teeth are ſaid to be abſorbent when reduced to powder, and good againſt looſeneſſes and ſpitting of blood. *

The COAL FISH, called in *Cornwall* the RAWLING POLLACK, is very much like the former, only it is a little longer, and more ſlender. The lateral lines are not bent at the beginning like a bow, as in the former; beſides which they are white and broad, by which mark they diſtinguiſh it from the Whiting-pollack. It is not variegated with yellowiſh ſtreaks like that, and the colour is blacker, more lively and ſhining; from whence it is called the Coal-fiſh. The fleſh is not ſo good as that of a Cod, but it is better than a Haddock. They are taken on the coaſts of *Northumberland* and *Yorkſhire*, as well as on thoſe of *Cornwall*.

The BIB, or BLIND, ſo called by the inhabitants of *Cornwall*, has a barb under its chin, in which it agrees with the Cod; but it differs from it in its ſize and ſhape, being ſhorter and broader, and the colour lighter. The ſize of the ſcales are alſo twice as large as thoſe of a Cod, and adhere cloſely to the ſkin. The Cod has likewiſe a ſpine or thorn at the tail fin, which this wants.

The YELLOWISH POLLACK is pretty much like a Whiting-pollack, only the fins are leſs, and thoſe which are under the chin are yellowiſh as well as the reſt, but the back and ſides are of a dark yellow, and full of ſaffron coloured ſpots.

The

* This fiſh is taken near *Penzance* and *St. Ives* in *Cornwall*; but he is ſometimes caught by what they call Rock-fiſhing; that is, by ſtanding upon the rocks while they angle. Thoſe that fiſh out of a boat or ſmack muſt have a line ſixty yards long, with three or four hooks, one above another, and baited with different baits. The beſt time for ſea-fiſhing is in warm weather, either early in the morning, or after ſun-ſet, provided the tide has been ebbing near half an hour. The fleſh of this fiſh is well taſted, nouriſhing, and flaky like that of a Cod. The northern people have always been accuſtomed to dry their fiſh, becauſe it is their principal nouriſhment; and when a Cod is ſo dried it is called Stock-fiſh, becauſe it muſt always be beaten before it is uſed.

The HADDOCK is of a middle ſize between a Whiting and a Cod, and the colour is blackiſh on the back with ſmall ſcales. A black line runs from the upper corner of the gills to the tail; and on the middle, on both ſides, not far from the gills, there is a large black ſpot, which diſtinguiſhes it from all others. The eyes are large; a barb hangs down from the lower jaw about an inch long, and the tail is forked. In other things it reſembles a Cod.

The WHITING differs from all other fiſh of this kind, in being the leaſt, in having the upper jaw longer than the lower, and in the teeth, which appear out of the mouth when it is ſhut. Likewiſe, the belly fins in this kind are placed more forward than in the reſt, and it wants a barb. It is called a Whiting, becauſe the colour of the back is much lighter than in any other of this kind. It is a ſlender fiſh for its ſize, eſpecially towards the tail, for about the head the make is conſiderably larger. The fins below the vent are ſpeckled with black, the ſcales are ſmall, and the eyes are large, and covered with a tranſparent looſe ſkin. The fleſh is ſweet, tender, and univerſally eſteemed in all parts of the world, where it is caught, for its wholeſomeneſs. *

There are two ſmall oblong ſtones in the head of a Whiting that are ſaid to be good in fits of the gravel, and are proper to ſtop looſeneſſes, and to abſorb acids in the ſtomach.

The WHITING POUT is a remarkable broad fiſh, in proportion to its length, by which it may be readily diſtinguiſhed from all other fiſh of this kind. The extremity of the tail and fins are blackiſh, and at the roots of the gill fins, on each ſide, there are large black ſpots. It is about eleven inches in length, and three and a half in breadth, and the firſt back fin, which is of a triangular ſhape, is produced into a longiſh

* The catching of Whitings in a boat or ſmack is diverting enough, becauſe they bite very freely, and require no nice tackle to take them. The places where they lie may be readily known from the Sea-gulls that always hover over them; and they may certainly be met with if they ſeem to dip into the water every now and then.

horn. The ſcales are ſmall, and every where of a ſilver colour, as in the Whiting; but the mouth is much narrower than the reſt of its kind. The young fiſh of this ſort are called *Whiting-Mops* by the *Londoners*, and are generally very common in the month of *October*.

The HAKE is above a cubit in length, and is of the ſhape of a river Pike, for which reaſon ſome call it the Sea-pike. The back is of a light colour, and the belly of a dirty white, with ſmall ſcales. The head is broad and flat, and the mouth large like that of a Pike, being full of ſharp teeth. The tongue is ſmooth, the eyes large and of a gold colour, being covered with as tranſparent a membrane as in ſome of the Cod kind. The tail is not forked, but terminates in a right line. It feeds upon other fiſh, and the fleſh is ſoft and tender *.

The LING, ſo called by the *Engliſh* on account of its length, is for ſhape and colour much like a Hake, only it is longer, and the ſcales are not cloſely adhering to the ſkin. The head is flat and depreſſed as in a Hake, from which it differs in being bigger and longer in proportion to its bulk. The tail is round, not forked, and there are a multitude of rays on the back fin. The rays of the ſecond pair of fins are long, though leſs than the fins themſelves. The lower jaw of a Hake is a little longer than the upper, but in this the upper is longeſt. The Hake has no barb, but this has, beſides many appendages, perhaps forty, and that has none. Likewiſe the fleſh is much better, and more wholeſome than that of a Hake, and is preferred to all other ſalt fiſh †.

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* The Hake is caught in great plenty about *Penzance* in *Cornwall*, and is to be met with almoſt every where in the *Britiſh* and *German* oceans. The proper time of catching Hake at *Fiſcard*, and other places between *Wales* and *Ireland*, is from *Whitſuntide* to *St. James*'s tide.

† This fiſh is frequently taken near *Penzance* in *Cornwall*, and may be caught among the iſlands of *Scotland* all the year. To the north-eaſt it may be met with from *Eaſter* to *Midſummer*, and to the north-eaſt of *Ireland* from *Chriſtmas* to *Michaelmas*.

CHAP. X.

Of Fiſh of the Tunny kind.

THE TUNNY FISH, or *SPANISH* MACKREL, ſometimes grows to ſo great a bulk that it might be placed among the Whale kind; for ſome have weighed above an hundred pounds. They are ſeven feet long, and have a round body, which decreaſes gradually from the middle till it becomes exceeding ſlender at the tail. It reſembles in all things a common Mackrel, except its bulk, and therefore needs no farther deſcription. *

The TUNNY is a fiſh of paſſage, for it rambles from one part of the ſea to another at a conſiderable diſtance. In the months of *September* and *October* they leave the ocean, and paſs through the ſtraits of *Gibraltar* into the *Mediterranean* ſea towards the *Levant*. They are often taken on the coaſt of *Cornwall* with their ſtomachs full of Pilchards. Moſt authors ſeem to think that the place of ſpawning is the *Black ſea*, and that they croſs the *Mediterranean* for that purpoſe. The fleſh of this fiſh, though not very delicate, is ſaid to eat well enough when properly cooked. †

* Theſe fiſh always ſwim in ſhoals, and they may be readily known by the great noiſe they make when they paſs along; for they agitate the ſea with great violence. They are extremely afraid of thunder: at that time they are eaſily taken with nets, which are made for that purpoſe, in the *Mediterranean*.

† The time of fiſhing for Tunnies begins in *September*, and they are caught by a ſort of wears made of ſmall canes, which the *French* call *Madragnes*, ſome of which are ſaid to be a mile in compaſs. They are divided into ſeveral partitions, and the fiſh, having entered the large ones, are drove from thence into the ſmaller; for they are like ſheep, if one leads the way, all the reſt will follow. The inmoſt partition of all is of a cloſer contexture than the reſt, and is floored as it were with a net. When they take out the fiſh, they draw it ſo near the ſhore, that the bottom may be within five feet of the ſurface of the water, and then the fiſhermen leap into it, as into a fiſh-pond, laying hold of the fiſh by the ſmall part of their tails, and throw them into boats, where they immediately die.

When they are brought to land, they hang them up in the air, and then cut off their heads; taking out their entrails, and cutting their

The MACKREL is generally a foot, and ſometimes a foot and a half in length. The body is long, round, thick, and fleſhy, but towards the tail very ſlender and ſmall. It is not entirely without ſcales, for it has ſome that are thin and ſmall. Underneath the lines, that divide the ſides in the middle, it is of a bright ſilver colour, but above them of a bluiſh green. On the back, towards the ſides, proceed ſeveral dark ſtreaks, which by diverſifying the colour contribute greatly to the beauty of the fiſh. The tail is ſo very much forked, that it ſeems almoſt to be parted into two diſtinct fins. The jaws are of an equal length, and furniſhed with ſmall teeth: the eyes are large, the tongue ſharp, and the noſtrils ſmall and round. The Mackrel may be diſtinguiſhed from the Tunny by the ſmallneſs of its ſize, and by the blackiſh lines on the ſides, ſome of which are ſtraight, and others crooked. It is a fiſh of prey; for there are often ſmall fiſh found in its belly.*

The fleſh of Mackrel is very good when freſh, eſpecially if they are dreſſed when juſt taken out of the water. There is ſuch a difference between them at that time and when they are brought to *London* as is not to be conceived but by thoſe who have made the trial. However, they are not to be deſpiſed when they are well

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their bodies into pieces, they broil them on large gridirons, or fry them with oil-olive. This done, they ſeaſon them with ſalt, pepper, cloves, and a few bay leaves, and then put them into barrels, with freſh oil-olive and a little vinegar. In this condition they are tranſported into different parts of *Europe* by the name of *Sea-tunny*. The fleſh of this fiſh, though not delicate, is very uſeful; for, when it is properly cooked in the manner above directed, and cured with good oil, it is as firm and white as veal, and eats pretty much like it. Some are very fond of it at all times, thinking it to be a fiſh of very good taſte, very wholeſome, and yielding good nouriſhment.

* Mackrel ſwim in large ſhoals in divers parts of the ocean, but particularly on the coaſts of *England* and *France*. They enter the *Engliſh* channel in *April*, taking their courſe through the ſtraits of *Dover*; and in *June* they advance as far as *Cornwall*, *Suſſex*, *Normandy*, and *Picardy*. They are taken either with an angle-rod, or with nets; and, when they are angled for, it muſt be out of a boat, ſmack, or ſhip that lies at anchor. They will ſnap at any thing, inſomuch that they will take a bit of ſcarlet cloth.

well cured by pickling and put up in barrels. There are two ways of pickling them; the firſt is by opening and gutting them, and filling their bellies with ſalt, cramming it in as faſt as poſſible with a ſtick; this done they range them in rows at the bottom of the veſſel, ſtrewing ſalt between the layers. The other way is to put them immediately into tubs of brine made of freſh water and ſalt, letting them ſteep long enough to imbibe ſalt ſufficient to preſerve them from corrupting. After this they put them into barrels, taking care to preſs them down cloſe.

The ALBICORE is ſix or ſeven feet in length, with yelloviſh eyes, and a forked yelloviſh grey tail. The bottom of the belly is blue, inclining to green, and near the tail there are ſeveral ſhort fins on the under part. Theſe fiſh are very bright, and ſhine like ſilver when they are catched at ſea with hooks, which they often are by the ſailors to their very great refreſhment, the fleſh being very good and well taſted. They are very common between the tropicks, but they wander farther to the north when the ſun is in the northern ſigns.

The BONETTOE is about three feet in length, and two in circumference. It is often ſeen in company with the Albicore, and has a ſharp head, a ſmall mouth, large gills, full ſilver eyes, and a tail like a half-moon. It has no ſcales except on the middle of the ſides, where there is a line of a gold colour, which runs from the head to the tail. On this line there is placed a double row of ſcales, which are ſmooth two thirds of the length, but it begins to be rough when it reaches the tail. It is greeniſh on the back and ſides, but ſhines on the belly like ſilver. It has ſeven fins, two on the back, two at the gills, a pair on the belly juſt below the gills, and one in the middle of the belly oppoſite to the largeſt on the back. From the laſt on the back proceeds a ſmall narrow one, which reaches to the tail; and another that extends from the laſt on the belly to the tail in like manner. Some have erroneouſly thought that the Bonettoe and Albicore are the ſame fiſh; but I can contradict this from my own experience, having often examined and eaten of them both.

The KING'S FISH, called by the *Braſilians*, GUARAPUCU, and by the *Portugueſe*, CAVALLO, is ſeven feet in length. It is of the thickneſs of a man's body, and every where equal, except towards the back part, where it grows gradually ſmaller. The ſnout is pointed, and the teeth ſharp, round, and regularly placed. The eyes are large, with an iris of a ſilver colour; and the fins and tail are like others of this kind. There are alſo ſmall fins on the top of the back and under the belly, between the hinder back fin, and the fin near the vent, and at the tail. It is covered with a ſkin of a ſilver colour, which on the belly has a blueiſh caſt, but on the back is of a deeper blue. On each ſide there is a crooked line which reaches to the tail, and is covered with exceeding fine ſcales.

CHAP. XI.

Of Fiſh of the Trout kind.

THE GUINIAD, ſo called in *Wales*, is bred in *Pemble-meer*, a lake in *Merionethſhire*. The ſhape is not much unlike that of a Salmon, and the uſual length is about twelve or thirteen inches. The back is of a duſky colour, and the belly is white. The top of the head is of light blue, ſpeckled with darker ſpots, and the ends of all the fins are of a dark blue. The mouth is much like that of a Herring, the upper jaw being ſomewhat more prominent than the lower; and it has no teeth either in the jaws or throat. The belly does not terminate ſharp like a wedge, but is about three quarters of an inch broad; and the ſcales are of a middle ſize. The eyes are large, but have no pellicle or ſkin to cover them, as many other fiſh have. The lateral lines run directly from the corner of the gills to the tail, which is forked at the end.

The Guiniad generally lies at the bottom of the lake, among the weeds termed water gladiol, which is peculiar to theſe mountains. It is called Guiniad from the whiteneſs of its body; this word ſignifying much

70. Sea-Lark.

Indian Lamprey.

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Sea Korette

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Indian Sea-Eel.

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King Fish.

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much the ſame as Whiting in *Engliſh*. They are in ſeaſon in ſummer time; and though the fleſh is white, it taſtes like that of a Trout; but it is in much higher eſteem, becauſe it is a greater rarity.

The SCHELLY, ſo called by the inhabitants of *Cumberland*, is the LAVARETO of other authors; and is found in the lake termed *Hulſe-water*, not far from *Pereth*, a town in *Cumberland*. It is not a very large fiſh, for it rarely exceeds two pounds in weight; and for its ſize, it is longer than a Trout, and of the ſhape of a Herring. The ſcales are larger than thoſe of a Trout, and the ſides and belly are of a ſilver colour. A line runs from the corners of the gills directly to the middle of the tail.

The GRAY-LING, termed in ſome places the UMBER, has a long and flatter body than that of a Trout, and in ſize ſeldom exceeds eighteen inches: in weight it is about half a pound, but in ſome places they are three times as heavy. Its back is of a duſky green inclining to blue, and the ſides are grey, from whence it has its name of Gray-ling, though they ſeem to glitter with ſpangles of gold; and are marked with black ſpots irregularly placed. The lateral line, common to all fiſh, is nearer the back than the belly; the top of the back fin is painted with red, but the lower part is of a blueiſh purple; the fins of the belly are likewiſe of the ſame colour, that is, of a blueiſh purple ſpotted with black. It has a little head with protuberant eyes, whoſe iris is of a ſilver colour, ſpeckled with a duſky yellow. The mouth is of a middle ſize, and the upper jaw is longer than the lower; but it has no teeth; the lips are rough like a file, the tongue ſmooth, and the gills quadruple. *

* This fiſh delights in rivers that run through mountainous places, and are to be met with in the ſwifteſt and cleareſt parts of thoſe ſtreams, particularly in the rivers *Hodder*, *Dove*, *Trent*, *Derwen*, *Wye*, and *Lug*. The fleſh may be eaten all the year; but their chief ſeaſon is *December*, at which time the head, gills, and the liſt that runs down the back, are black. It is firm, white, cleaves like that of a Salmon, and is accounted very good and wholeſome. It is a briſk ſprightly fiſh when in the water, ſwimming as ſwift as an arrow out of a bow. They ſpawn in *May*;

The SALMON has different names, according to its different ages; for thoſe that are taken in the river *Ribble* in *Yorkſhire*, are in the firſt year called Smelts, in the ſecond Sprods, in the third Morts, in the fourth Forktails, in the fifth Half-fiſh, and in the ſixth, at which time they are thought to have attained their proper growth, they are judged worthy of the name of Salmons. The ſize of this fiſh is much the ſame in moſt parts of *Europe*; and when they are largeſt they weigh near forty pounds.

The Salmon is a very beautiful fiſh, and is every where in great eſteem; the body is longiſh, covered with ſmall thin ſcales, and the head is ſmall with a ſharp ſnout, and the tail is forked. The colour on the back is blueiſh, on the other parts, white, generally intermixed with blackiſh or reddiſh ſpots, placed in a very agreeable manner. The female may be diſtinguiſhed from the male, by having a longer and more hooked ſnout, in having ſcales that are not quite ſo bright, and having its body ſpeckled over with dark brown ſpots. Likewiſe the belly is flatter, the fleſh is more dry, and not ſo red; nor yet is the taſte ſo agreeable.

The excreſcence which grows out of the lower jaw of the male, and is a bony griſtle like the beak of a Hawk, is not a ſign of his being ſickly, as *Walton* and others have thought; but is a defence provided by nature againſt ſuch fiſh as would devour their ſpawn. It grows to the length of about two inches, and falls off

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May; and in *December*, when in their higheſt perfection, on a mild, ſun-ſhiny day, they bite beſt for about two hours before noon, and, in ſummer, his hours of biting are like thoſe of a Trout; but your tackle muſt be finer than for that fiſh, and your hook whipped to ſilk-worm gut, well waxed with virgin's-wax. Fiſh ſix or nine inches from the bottom, he being more apt to riſe than deſcend. He is the quickeſt-ſighted and moſt eaſily to be ſcared of any fiſh; ſo that the angler muſt keep concealed as much as poſſible: he is tender mouthed, and will break his hold, if not gently uſed when ſtruck. He will take all the Trout's baits but the Minnow: his flies muſt be ſmall, and under water. An aſh-grub, dock-worm, wheat or malt, or a ſmall red-worm, are better than any. He ſeeks the largeſt and ſwifteſt ſtreams, and is generally found near middle-water.

off when he returns to the ſea. He is likewiſe more ſpotted in freſh water than in the ſea. The teeth are ſmall in proportion to its body; and the gills are four double, with a broad cover full of red ſpots, of the ſame colour as on the ſides; for towards the back, they are more duſky. The fleſh is not ſo red at firſt, as when it is boiled or ſalted; and it is tender, flaky, and luſcious; for which reaſon it ſatisfies ſooner, and is harder of digeſtion, though generally preferred to that of other fiſh. About the time of ſpawning it grows more inſipid, and loſes a great deal of its lively colour. Some begin to be out of ſeaſon about the beginning of *July*, and others much later: which may be known by their falling away, their loſing their beautiful ſpots, and by their colour; inſomuch, that when they are quite out of ſeaſon, they look like fiſh of a different kind.

The SALMON-FRY, called in ſome countries a Salmon-Smelt, is by moſt thought to be the offspring of a ſickly Salmon, which has been forcibly detained from viſiting the ſalt water; but however that be, it is agreeable enough to the eye, though its taſte is very ordinary and inſipid. The Salmon chuſes the rivers for its abode about ſix months in the year, entering the freſh water about *February* or *March*, in ſome countries, where they continue to the autumnal ſeaſon, at which time they caſt their ſpawn, and ſoon after return to the ſea. However, it is ſaid, that the Salmons of the river *Ex* in *Devonſhire*, and of the *Wye* and *Uſk* in *Monmouthſhire*, are in ſeaſon during the other ſix months, and that they never frequent the *Wye* and *Uſk* the ſame year; for when they are found in the one, there are none in the other. In general, the ſalt water contributes moſt to their growth, and the freſh renders them fat.

When the time of ſpawning comes, the female makes a hole in a gravelly bottom, like a kind of neſt of her own dimenſions; which done, ſhe diſcharges her ſpawn and retires. Then the male, or milter, advances and covers the ſpawn with its belly, emitting at the ſame time a whitiſh fluid like milk. After this the female returns, and they both endeavour to cover their brood

with gravel, in which they work with their noſes like hogs. Then they return to the deeps to recover their ſtrength, which they do in about twenty days time.

There is nothing more remarkable relating to this fiſh than its agility in leaping over obſtacles that oppoſe its paſſage to and from the ſea; for they are frequently ſeen to throw themſelves up cataracts and precipices many yards high. They ſometimes make ſeveral eſſays before they can gain their end; and at that time there are ſometimes baſkets ſet to catch them, into which they leap. There is a remarkable cataract in the river *Tivy* in *Pembrokeſhire*, where people often ſtand gazing to obſerve the ſtrength and ſleight, which they uſe to get out of the ſea into the river. This is well known in thoſe parts by the name of the *Salmon-leap*. In the river *Wear*, near the city of *Durham*, there is another, which is accounted the higheſt in *England*. Likewiſe, at old *Aberdeen* in *Scotland*, there is one where Salmon have been caught in ſuch great plenty, that they have carried on a great trade in that fiſh. The Salmon when he returns from the ſea, is always ſaid to enter the ſame river in which he was ſpawned. This is evident from the experiments made by fiſhermen, and others, who have caught them when very ſmall, and have run a bit of tape through the tail fin; for by this mark they have been certain they have retaken the ſame fiſh, in the ſame river, after his return from the ſea. *

The

* The chief rivers in *England*, frequented by this excellent fiſh, are the *Thames*, *Severn*, *Trent*, *Medway*, *Dee*, *Ex*, *Uſk*, *Wye*, *Lon*, *Tyne*, *Warkington*, *Wever*, *Loane*, and others. However, the *London* markets are chiefly ſupplied from the North, where they are not only more plentiful, but are in ſeaſon ſooner than thoſe in the ſouthern rivers.

The chief Salmon fiſheries in *Europe* are along the coaſts of *England*, *Scotland*, and *Ireland*, where the fiſhing uſually begins about the firſt of *January*, and ends in the latter end of *September*. It is performed with nets near the mouths of the rivers, and along the ſea-coaſts thereabouts, when the fiſh are ſeen to crowd thither, from all parts, in queſt of freſh water. They alſo fiſh for them higher up in the rivers, ſometimes with locks or weirs, made for that purpoſe, with iron gates. Theſe gates are ſo contrived, that the fiſh in paſſing up the river can open them with their heads; but they are no ſooner entered, than the gates clap

The gall of Salmon is only uſed in medicine, and that to take away ſpots of the eyes, and to cure a noiſe in the ears, by putting a little therein with a bit of cotton.

The SAMLET, ſo called in *Hereford ſhire*, is named a BRANDLIN, and FINGERIN in *Yorkſhire*. It is very like a Trout, and yet differs from it in being much leſs, for it is but ſeven inches long, and an inch and a half broad. It is alſo a little broader in porportion than a Trout, and has fewer ſpots; theſe are not ſo lively, and the back ſpots are leſs: beſides it is whiter, and has a more forked tail; the ſides are not ſo yellow under the ſpots, and the lateral lines in a Trout are greater, and more red than in this fiſh. Add to this, that there are tranſverſe ſpaces near the lines, of a blueiſh colour, which the Trout has not. It is taken in the river *Wye* in *Herefordſhire*, and elſewhere.

clap to and prevent their return. Thus the Salmons are encloſed as in a reſervoir, where it is eaſy to take them. In ſome places, they fiſh for Salmons in the night time, where they light up torches or kindle ſtraw, which invites this fiſh to draw near, and then they may be either ſtruck with a ſpear, or taken with a net. In ſome parts of *Scotland*, it is ſaid, they ſhoot Salmon, when they eſpy them in the ſhallows, with fire arms. When they are caught, they are either ſalted and dried, or pickled, and put into caſks, and then tranſported to diſtant markets.

Salmon reſort to the cleareſt waters, and in ſummer near the ſpring heads, in the middle of the deepeſt part of a rapid ſtream, and near the ground on pebbly, chalky, or gravelly bottoms. He takes all the Trout's baits, but eſpecially a lob-worm, well ſcoured in moſs. There are ſome particular methods of preparing this worm, of which we ſhall inform the angler in the little treatiſe at the end of this volume. He is not fond of a Minnow or a fly, though, of the latter, the live one ſucceeds beſt. The artificial fly muſt be large, and of flaring, gaudy colours, the body made with gold and ſilver threads, with four or ſix long wings ſtanding one before another, and likewiſe a long tail: they are very nice and whimſical in changing their baits. He bites, from the middle of *April* to *Auguſt*, about nine in the forenoon, and three in the afternoon, in ſun-ſhiny days that are rough and windy, if it blows againſt the ſtream. Fiſh five times ſtronger than for a Trout. The hook muſt be large, armed with gimp, or whipped on to hogs briſtles. You may either trowl for him, or make uſe of the ledger bait.

The GRAY is probably the ſame fiſh which in *Scotland* they call the GREY-LORD; it differs in ſize but little from a Salmon, but the ſhape is very unlike, for they are conſiderably broader and thicker, and the tail is not forked. The body is every where ſpeckled with aſh-coloured or grey ſpots, from whence it derives its name. The fleſh is preferable to that of Salmon, and bears almoſt double the price. It is a very ſtrong and nimble fiſh, making its way from the ſea into the rivers with extreme ſwiftneſs, ſurmounting almoſt all obſtacles with the greateſt eaſe. This fiſh is ſeldom taken, and therefore is known but to few; and it does not come into the rivers before *Auguſt*, which is the time of ſpawning.

The SALMON-TROUT, the BULL-TROUT, or SCURF, differs from the Salmon, in having a tail not ſo forked at the end; from a Gray, in its head, which is ſhorter and thicker; and from both, in being leſs, for it ſeldom exceeds twenty inches in length. The fleſh is not red as in a Salmon, and it has a much ſtronger, and more diſagreeable ſmell than that of a Gray.

The BARRACADA is about fifteen inches long and three broad, in the middle where it is broadeſt. The lower jaw is a quarter of an inch longer than the upper; and the eyes are two inches diſtant from the end of the ſnout, being nearly of the ſame length as the cleft of the mouth. The lower jaw is furniſhed with very ſmall teeth, and the upper has a double row, of which the outer are the ſhorteſt. The fore part is narrow as far as the gills, gradually increaſing to thoſe parts, from whence this fiſh is almoſt of an equal thickneſs to the vent, where it begins to grow leſs to the beginning of the tail. The colour is duſky on the back, as far as the lateral line, which runs from the head through the middle of the ſides to the tail; but it is white on the belly. It is ſprinkled with black ſpecks, and covered with ſmall thin ſcales. There are two fins on the back about an inch long as well as broad; and the ſame number at the gills. On the belly there are likewiſe two, and one behind the vent. The fins are ſoft, the tail broad and forked. The name of this

fiſh is probably *Spaniſh*, and it has no *Engliſh* name in Sir *Hans Sloane*'s catalogue.

The MUD-FISH is akin to a Trout, and is about ſeven inches long, and one thick, near the head, where it is thickeſt; and from thence to the tail it becomes gradually ſmaller: there are ſeven fins placed as uſual. It is covered all over with minute ſcales, which are partly white, partly yelloviſh, and partly black, only on the belly they are all white. The under jaw is longer than the upper, and they are both armed with ſeveral rows of ſmall ſharp teeth. It is found in the lakes and rivers in the *Weſt-Indies*, and is accounted very good eating.

The TROUT is of a longiſh make, and reſembles a Salmon more than any other fiſh. The head is ſhort and roundiſh, the ſnout blunt, the body thick, and the tail broad. The mouth is wide, and there are teeth not only in the jaws, but the palate and tongue. The eyes are large, with a reddiſh circle round the pupil; but the reſt of the iris is of a ſilver colour. The ſcales are ſmall, and the ſkin readily falls into wrinkles, and ſeparates from the fleſh. In the larger Trouts, the back is of a duſky hue, and full of black ſpots, which in ſome are mixed with red. The ſides are painted with ſpots of a purple or vermillion die; but on the belly they have a yelloviſh caſt. There are two fins on the back; that next the head is full of black ſpots, and the edge of that near the tail is of a vermillion colour. On the belly there are two pair, which are always either red or yellow.

Trouts generally delight in cool and ſmall ſtreams which deſcend from hills and rocky mountains; and ſeem to take a pleaſure in ſwimming againſt the courſe of the water, ſtriving to gain, as it were, the ſpring head of brooks and rivulets, let their deſcent be never ſo rapid. Several authors inform us, they are found in ſmall rivers among the *Alps*, which are ſo cold, that no other fiſh can bear them company. The time of ſpawning is in *November* or *December*, when they dig holes in ſtony or gravelly places, and depoſite their ſpawn therein. They are not in the higheſt ſeaſon when fulleſt of ſpawn; for they are fatteſt, and have the

the moſt delicious taſte in *July* and *Auguſt*. However, they begin to be in ſeaſon in *March*, and are ſooner ſo in ſome rivers than in others; particularly in the *Wandle*, they are more forward than in any other about *London*, and there is near a month difference between that and *Hertford* river. In the winter time Trouts are ſick, lean, and unwholeſome, breeding a kind of worm with a large head, which is not unlike a clove in ſhape. Then this fiſh ſeems to have a head of a larger ſize than ordinary, thoſe beautiful ſpots diſappear, and the lively colour of the belly becomes duſky and diſagreeable. But towards the latter end of *March*, when the ſun with its genial warmth and influence begins to invigorate the earth, he then makes a ſhew of ſome ſpirit, and rouſing as it were from a ſort of lethargy, forſakes the deep ſtill waters for the more rapid ſtreams, where he rubs off his in-bred foes againſt the gravelly bottoms, and ſoon after recovers his former ſtrength and vigour. The fleſh is drier, and not quite ſo tender as that of a Salmon; however, it is eſteemed the moſt agreeable of all fiſh that make their conſtant abode in freſh water. *

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* To the haunts of this fiſh already mentioned, may be added, that he is frequently found in dead holes, behind ſome ſtone, ſtump, or a point of land, that ſtands ſhooting out, and makes a motion in the water like an eddy: he is alſo ſometimes taken under the ſhade of a buſh, or hollow, hanging bank, and at a ſtream tail in ſpring, and the latter end of ſummer. A lob-worm and brandling are his chief baits; a large one in a thick, and a ſmall one in a clear water. Cadis are excellent baits at the bottom, two or three on a hook together, and ſometimes joined to a worm. A Minnow, or any ſmall fiſh, will do half an inch under water; and all flies, natural and artificial, at top. He bites from ſun-riſing to ſun-ſet, or later, and may be angled for all night; but nine in the morning, and three in the afternoon, are his moſt certain hours, either at ground or fly. A water-clearing after a flood, or dark, cloudy, and gloomy weather, when windy, is favourable for the ſport. In *March*, *April*, *September*, and part of *October*, the moſt ſunſhiny weather, and middle of the day, is beſt. In little brooks, when a ſhower has diſturbed them, or a mill is juſt ſet agoing, there is good diverſion, and on the contrary little or none. Fiſh ſtrong and fine, and conceal yourſelf as much as poſſible; but in muddy water you may be bolder. When you angle with a float or ledger-bait,

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The FORDICH TROUT is of a different ſpecies from a Common-Trout; for it is almoſt as large as a Salmon, and continues nine months in the ſea. Beſides it is ſeldom or never caught with an angle, being ſuppoſed not to feed at all in freſh water; at leaſt, when their maws have been opened, there has been nothing found therein. However, they return to the river ſo very conſtant and punctual, that the fiſhermen know almoſt to a day when to expect them. Perhaps this fiſh, though called a Trout, is the ſame as the Gray-Lord before mentioned.

The RED CHAR is taken in the lake called *Winandermeer* in *Weſtmoreland*, and by the *Welch* is named TORGOCH. It has a more long and ſlender body than a Trout, and the back is of an olive-green colour, ſpeckled with whitiſh ſpots. The belly is generally red, tho' it is ſometimes white, eſpecially in the ſpawners. The ſcales are exceeding ſmall, and the lateral lines ſtraight. The mouth is wide, the jaws pretty equal, only the lower is a little ſharper and more protuberant than the upper. The lower part of the fins are of a vermillion die, and the gills are four double. There are teeth both in the jaws and on the tongue; but in the upper jaw there is a double row. The fleſh is more ſoft and tender than that of a Trout, and it is but very little tinctured with red when boiled. It is in very high eſteem, perhaps becauſe it is exceeding ſcarce; and in *Wales* it is accounted the chief diſh at the tables of people of faſhion. *

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lie as near as you can to the bottom, without dragging; but when with a fly, keep it always in motion on the top. After a ſhower, this fiſh will riſe at a gnat. In the evenings of hot days, dib with a graſs-hopper, as for Chub. You may take this as a rule, wherever you find any Minnows or Chub, expect no Trout. Ground-bait, where you intend to fiſh, the night before, as it will allure the Trout to thoſe places.

* The only place in *England*, where this fiſh is taken, is *Wirander-meer*; but in *Wales* it is caught in five different lakes. In *Merionethſhire* they are ſmaller than in other places, and are taken in *October*; but in one of the lakes of *Carnarvonſhire* they are caught in *November*; in another, in *December*; and in a third, in *January*: ſo that the fiſhing ends in one when the other begins. They ſwim together in ſhoals; and, though they appear on the

ſurface

The GILT CHAR is the ſame as the Red Char of *Winander-meer* in the county of *Weſtmoreland*; and is like a Trout, only it is much broader, and has a more prominent belly. The ſcales are very ſmall, and the colour on the back is lighter than that of a Trout, though variegated with black ſpots. The belly and ſides are of a ſilver colour; the ſnout is blueiſh, and the ſkull tranſparent. It has teeth in the palate, and two rows of them on the tongue. The fleſh is red, and is in high eſteem among the *Italians*. It never exceeds twelve inches in length.

The TARANTOLA, ſo called by the inhabitants of *Rome*, is a round oblong fiſh, more ſlender near the head, and grows ſenſibly thicker to the firſt back fin, from whence it gradually decreaſes to the tail. It is a foot in length, and broader than a man's thumb. The belly is whitiſh; the back of a blackiſh-green, ſpeckled with green, blue, red, and black ſpots on the back, head, and ſides. The top of the head is flat, and there is a ſmall pit between the eyes; the mouth is extremely wide, and the ſnout terminates in an acute angle. There is one row of long ſharp teeth in both jaws; and the hinder fin on the back, placed not far from the tail, is little and deſtitute of rays, being nothing elſe but an appendage of fat or fleſh, as is common to the Trout kind. This is a ſingular ſort of fiſh, for there is no ſea fiſh like it.

The SMELT is ſo called, from having the ſmell of a violet, though ſome ſay it is like a cucumber. It is ſix inches long, and near an inch broad. It is the leaſt of theſe kind of fiſh, and the ſhape of the body is more long and ſlender. The ſcales fall off with the ſlighteſt touch; and the ſkull is ſo tranſparent, that all the lobes of the brain may be plainly and diſtinctly ſeen. The back is of a duſky colour, but the belly and ſides ſhine like ſilver. Thoſe that examine them attentively, will find

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ſurface of the water in ſummer time, yet they will not then ſuffer themſelves to be taken either with an angle or nets. The only ſeaſon for catching this fiſh is, when they reſort to the ſhallow parts of the lakes to depoſit their ſpawn. At this time they ſet trammel-nets baited, and ſo leave them for whole days and nights, after which they are generally ſure to find ſome therein.

find ſmall black ſpots on the head and back, and the lower jaw a little more prominent than the upper; but they are both well furniſhed with teeth, and there are ſome on the tongue. The fleſh is ſoft and tender, and of a delicate taſte; for which reaſon it is in high eſteem. *

The RIVER SMELT, of the river *Sein* in *France*, is very like a Bleak, and only differs from it in the roots of the fins, which are red, and in having the lateral line bended as it were like a bow. It is near five inches long, and a little broader than a man's thumb. It has a particular ſmell, and is thicker and ſhorter than a Sea Smelt.

CHAP. XII.

Of ſlippery Fiſh, of the Eel kind, with Belly-fins.

THE SEA LOACH, ſo called in *Cheſhire*, is termed the WHISTLE FISH in *Cornwall*. It is nine inches in length, and the head is flat and depreſſed. It has a mouth like an Eel, furniſhed with ſeveral teeth, and on the upper jaw are only two barbs, one on each ſide, and another at the lower corner. The eyes are not far from the end of the ſnout, and their iris is of a ſilver colour. The ſcales are exceeding ſmall, and the head, back, and ſides, are variegated with large blackiſh-red ſpots. In a dent or pit almoſt in the middle of the back, inſtead of a fin, there is a low membrane or ſkin edged with extremely ſmall hairs; by which it may be known from all other fiſh of this kind; for, with regard to the ſpots, it greatly varies, they being white

* The Smelt is a fiſh of paſſage, and viſits the *Thames*, and other great rivers, in *March* and *Auguſt*. In the firſt of theſe months they generally advance up as high as *Mortlake*; but in the latter they make a ſtand about *Blackwall*; and this is probably the fiſh, which is there ſo much admired under the name of *White-Bait*. He muſt be fiſhed for with a paternoſter-line, which is made of ſix or eight very ſmall hooks tied along a line, ſix inches above each other. Bait with gentles, white paſte, or a bit of one of his own ſpecies.

white in ſome, and others have none at all. The colour of the back is of a duſky yellow, but the ſides are lighter, and the belly almoſt white. The gills on each ſide are quadruple.

The EEL POUT has a ſmooth, ſoft, ſlippery body, like an Eel, and has either no ſcales, or thoſe that are exceeding ſmall. The head is broad and depreſſed, and the jaws are as rough, with very ſmall teeth, as a file. The tail is flat and roundiſh: on the lower jaw there grows a barb about half an inch long; and between the noſtrils and the ſnout, there is a pair of ſhort barbs. The colour is of a blackiſh green, which is eaſily wiped off, and then there appears a mixture of yellow, white and black. *

The SHEAT FISH grows to the length of eight cubits and upwards, weighing one hundred and fifty pounds of eighteen ounces each. In the river *Viſtula*, which runs into the *Baltick*, they are ſometimes caught of the length of ſixteen feet, and twenty ſeven inches in breadth. They are of the colour of an Eel, only the belly and ſides are variegated with white and black ſpaces, or large ſpots. The body is ſlippery, being covered with ſlime, and is without ſcales. The head is very broad and flat, and the mouth exceeding wide: the body, to the vent, is thick and roundiſh, but the lower part of the belly is flat. In the upper jaw, before the eyes, there are two very long and hard barbs, which this fiſh thruſts out as it were to make ſome diſcovery. There hang four barbs from the lower lip, which are ſlender and more ſhort. There are no teeth properly ſo called; but the lips both above and below, as well as the palate, are as rough as a file, which might paſs for ſmall teeth. There is only one fin on the back, which is very ſmall, and conſiſts of three nerves. From the vent to the tail runs a very long fin, which joins to each gill-fin, and it has a hard thorn or prickle, with which it drives away troubleſome

* This fiſh is chiefly found in the river *Severn*; they ſpawn in *December*, and are ſo fruitful, that one roe is ſaid to contain no leſs than 128,000 eggs. Their uſual length is about fourteen or fifteen inches, though they ſometimes grow to twenty. The fleſh is good and ſweet, and in great eſteem.

bleſome fiſh. It is found in ſeveral rivers in *Germany*, as well as lakes, and keeps chiefly at the bottom. It is a very voracious fiſh, and does a great deal of miſchie wherever it comes. The fleſh is ſaid to be wholeſome food, and they dreſs it in the ſame manner as an Eel.

The CALLORHYNCHUS is a fiſh without ſcales, and has griſtly fins. It is of a ſilver colour on the back, and of a ſhining gold colour on the ſides; the lower lip is long and broad, and covers the upper when the mouth is ſhut. The teeth are only ſmooth tubercles placed in each jaw; and the noſtrils are ſeated on the lower part of the head, having only a ſingle hole each. The eyes are placed on the ſides of the head, and are covered with a ſingle coat; the iris is of a ſilver colour, and the eye-lid oval. The belly is large and flat, and the vent nearer the tail than the head, being ſeated between the belly fins. There are ſeven fins, namely, two on the back, as many on the breaſt and belly, and the tail makes the ſeventh. The length of this fiſh, from the top of the ſnout to the end of the tail, is nine inches and two thirds.

The BLACK FISH, ſo called by the *Engliſh* at *Aleppo* in *Syria*, is thought by Dr. *Ruſſel* to be like the Sheat-Fiſh in ſhape, though it is not above twenty inches in length, nor twenty ounces in weight. However, they are of different ſizes, and the head and back are black. The lateral line runs directly from the head to the tail, through the middle of the ſide; below which, to the belly, the colour generally changes to a dark purple, and the under part of the head is of the ſame colour. The head is flat, and near five inches in length; and the body round, till within a few inches of the tail, where it becomes flat. The mouth is not ſo large in proportion as the Sheat-fiſh, and it has no tongue. The make of the mouth and palate agree exactly with the deſcription of that fiſh. The eyes are placed near the corners of the mouth, near the lower edge of the upper jaw. There are four gills on each ſide, which are all armed with a double row of ſharp points, like the teeth of a comb. There are two fins near the gills, conſiſting of ſeven rays; and to the

the fore part, a pretty ſtrong prickly bone is connected. About an inch above the vent, are two ſmaller fins, and another long one that extends from the vent to the tail. There is likewiſe another of the ſame kind, that runs from the neck all along the back; but neither of theſe join to the tail, which is round at the tip. It is found in the river *Orontes*; and the markets of *Aleppo* are ſupplied with it in great plenty, from *November*, to the beginning of *March*. The fleſh is red like beef, and has a rank taſte.

The MISGURN, or FISGURN, ſo called at *Norimberg* and *Ratiſbon* in *Germany*, is of the ſhape of a Lamprey, and is broader and flatter than an Eel; but it is much of the ſame breadth from the head to the tail. The mouth is like that of a Lamprey, ſurrounded with barbs, there being ſix on the upper jaw, and four on the lower. It differs from a Lamprey, in having fins on the belly and at the gills, which a Lamprey wants; and they have gills and not lobes.

The body of this fiſh is covered all over with a yellowiſh-red ſlime; the head is higher than broad, and but little narrower than the middle of the body; the upper jaw is longer than the lower, and the mouth is round and very ſmall, being without teeth. The noſtrils are placed between the eyes and the end of the jaws; and the eyes are ſmall, and placed on the ſide of the head; they are covered with the ſame ſkin that covers the head, which is a ſort of a veil. Under the eyes there is a forked prickle, of which the outward point is ſhorteſt; the gills are double on each ſide, with an oblong covering, which opens on the ſides only; near the fins of the breaſt, the membrane of the gills contains three ſmall bones or ſpines, diſtinct from each other, the firſt of which is the largeſt. The ſkin on the back between the fin and the tail riſes into a ſort of a bump. The colour of the back and head is of a blueiſh green, marked with greeniſh-red ſpots; the upper part of the ſides is marked with a yellowiſh red line ſpeckled with black, and another line of the ſame colour as that on the back, runs along the middle of the body of this fiſh. Under the firſt line is another that is yellow, beſides

ſides another that is very narrow, and of a bluiſh green, ſpeckled with yellow; the belly is red, inclining to yellow. This fiſh has ſeven fins, two on the back, a pair on the breaſt, another at the vent, and one on the tail, which are all of a reddiſh-brown colour ſpeckled with black. When this fiſh is touched, it gathers itſelf into a round form, and makes a ſort of a whiſtling noiſe, from whence the *Gramans* call it PFRIFFER, or WHISTLER. It is found in ponds, pools, and marſhes, when the ſun has almoſt dried up the water, which happens in *Auguſt*.

The RED TAPE FISH, termed at *Genoa*, where it is common, CAVAGIRO, and FRAGGIA, has a long ſlender body, which is more flat on the ſides than an Eel, and grows gradually more ſlender from the head to the tail, which is very ſmall and ſharp at the end. It is all over of a paliſh red, except the belly, which is white. It has no ſcales, or at leaſt exceeding ſmall ones; and the mouth is large, turning upwards. It has only one row of ſlender ſharp teeth, and near each ſide of the upper jaw there is a black ſpot. The eyes are large, with a ſilver coloured iris; the back fin runs along from the head to the tail; and oppoſite to it there is another from the vent to the tail. Theſe, in the larger fiſh, are of a beautiful yellow on the lower part; and the upper edge is of a reddiſh purple. The outward rays of the tail are purple, and thoſe in the middle yellow.

The SUCKING FISH is remarkable for its ſucker on the top of the head, by which it fixes itſelf to other fiſh, and to the bottom of ſhips, when they ſail ſo faſt that it cannot keep up with them by ſwimming. It is about eighteen inches long, near four thick, of a roundiſh make, and ſlender towards the tail. The mouth is triangular, and the lower jaw is longer than the upper. From the upper part of the head towards the back, for the length of ſix inches, there is a griſtly ſubſtance of an oval form, like the head or mouth of a Shell Snail, but harder, and it has the appearance of the palate of a quadrupede, being deeply furrowed, and conſequently has ſmall ridges wherewith it faſtens to any thing at pleaſure. The eyes are ſmall

with

with a yellow iris, and inſtead of teeth, there are many ſmall eminences. It is of an aſh colour, and from the middle of the body, as well above as below, to the tail, it has a narrow fin, and there are two pair of fins near the head. The fleſh is thought by ſailors to be good eating.

The BUTTERFLY FISH is about ſeven or eight inches in length, and has a thick head, but towards the tail it is ſlender. The colour is of a light blue or aſh, with olive or dirty green ſtripes. The eyes are pretty large, and placed near each other on the top of the head; and above each eye, ſome of theſe fiſh have a ſmall fin. The fore teeth are long and round, near each other, and regularly placed. The back fin is very high at the beginning, and near the top of the fifth ray there is a very beautiful ſpot like an eye, ſurrounded with a white ring ending at the eighth ray; by which mark this fiſh may be readily diſtinguiſhed from all others: this fin is all over variegated with dirty green, or olive, and blue, brown and white ſpots, placed in no regular order. The belly is a little prominent, and there are no ſcales. This fiſh is often expoſed to ſale at *Venice*, among other ſmall ones in the winter time.

The SEA LARK, called in *Cornwall* the MULGRANOCK, or BULCARD, is a ſmall ſmooth ſlippery fiſh, which is very lively, for it will live ſeveral hours out of the water. It is of a dirty greeniſh olive colour, and ſome have tranſverſe light blue lines on the back, back fin and ſides; but the colour differs in ſeveral of theſe fiſh. The covers of the gills ſeem to be ſwelled; and the tail when expanded is of a circular figure. On the back part of the head there is a ſmall depreſſion, which makes it look as if it had a neck. The top of the head riſes almoſt to an edge, and the eyes are ſmall and white, with a reddiſh caſt. The mouth is not large, but is armed with long ſmooth fore teeth, placed like thoſe of a comb. The tongue is round, ſoft, and fleſhy.

The PUNARU, ſo called by the *Braſilians*, is four inches in length, and has an oblong body with a thick head, blunt on the fore part. The mouth is little, and there

there are only two ſmall teeth in the lower jaw, which are oblong, and as ſharp as needles. The eyes are placed upwards on the forehead, and the iris is of a gold colour; over them are two ſharp barbs, and the gills are large. There is a fin begins behind the head, that runs along the back to the tail, which is full of prickles.

There is likewiſe another fin that runs from the vent to the tail: It is covered with a brown ſkin, and the fins are of the ſame colour. There is another fiſh of the ſame name, and of the ſame ſhape; but the jaws ſeem to be compoſed of ſmall teeth. On the top of the head there is a broad fin which runs to the root of the tail, which is covered with ſoft ſpines, that do not ſtand upright. The colour is like that of the former, only it is variegated with dark purple crooked lines.

The SEA SNAIL, of *Rondeletius*, has a head like a Rabbit, and a ſmall mouth without teeth, but the jaws are rough. There is a broad ſtripe runs from the head to the tail, and the body is covered with ſmall ſcales. It has a fin on the back, which runs from the neck to the tail, and has ſoft rays; the tail is forked. It is ſo fat, that it turns all into oil, ſo that it ſeems nothing but a lump of fat. This deſcription is too general for ſo ſingular a fiſh.

The *Engliſh* SEA SNAIL, ſo called by the inhabitants of *Durham* and *Yorkſhire*, is a ſmall fiſh, being only five inches long. The colour is brown when it is juſt caught, but after ten or twelve hours, turns lighter. The head is thick and round, and the mouth withou teeth; but the jaws are a little rough. The apertures of the gills are ſmall holes that will ſcarce admit a pea; and under the throat there is a round ſpot like the impreſſion of a ſeal of a light blueiſh colour. There are alſo twelve brown ſpots placed in a circle; below which, at half an inch diſtance from the vent and behind it, a fin begins, that runs to the tail, and unites to it, as does likewiſe the fin on the back, from the ſhoulders where it takes its riſe; inſomuch, that the hinder part of the fiſh is in the ſhape of an Eel. It is taken in the mouths of rivers, four or five miles diſtant from the ſea.

CHAP. XIII.

Of Fiſh that have two back fins, and whoſe belly fins unite in one.

THE COMMON BULL-HEAD, or MILLERS-THUMB, is about four or five inches in length, with a large broad depreſſed head of a roundiſh ſhape. The gill fins are round and beautifully notched on the circumference. At the beginning of the cover of the gills, on each ſide, there is a crooked prickle. The mouth is large, and full of ſmall teeth: the back is yellow, with three or four black ſtripes; and the body is without ſcales. It is found in brooks and gravelly rivers, where they lie hid like Loaches under ſtones, and ſuch like places. *

The SEA GUDGEON, or ROCK FISH, is a ſlippery ſoft fiſh, covered with ſmall rough ſcales, and the ſhape of the body is long and roundiſh, being about ſix inches in length. The colour is variegated with a mixture of white, yellow brown, and other colours, interſperſed with black ſpots: there are likewiſe tranſverſe ſtreaks of an olive colour, which make theſe fiſh appear agreeable enough. The head is large, the cheeks tumid, and the mouth is armed with a double row of rough teeth: the belly fins unite into one, which is proper to this kind, inſomuch that it may be taken for a double fin in the middle of the breaſt; this enables them to ſtick cloſe to the rocks, from whence they have obtained the name of the ROCK FISH. The eyes are ſmall, yellow, and pretty near each other, looking upwards. †

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* The haunts of this fiſh are in clear and gravelly brooks and rivers, under ſtones or in holes, and in hot weather he ſuns himſelf by lying on flat pebbles. He will bite at a ſmall red-worm all ſummer long, and is ſo ſilly a fiſh, that whatever number there may be of them together, the moſt inexpert angler may take them all. When young, he is a good bait for a Trout; but the gill-fins muſt be cut off. His ſpawning time is in *April*.

† This fiſh is caught on the coaſt of *Cornwall*, and is common in the fiſh-markets of *Venice*, being taken near the ſhore, or in ponds made by the ſea-water. The fleſh is fat and tender, and is in very great eſteem.

The LUMP, or SEA OWL, called in *Scotland* the COCK-PADDLE, is a thick ugly fiſh, having a broad flat belly and a ſharp back. The colour is partly blackiſh, and partly of a light red, and though it wants ſcales, yet the ſkin is rough with ſharp tubercles, of a black colour in all parts. On each ſide there are three rows of ſpines or prickles, which are crooked; and on the top of the back, there is another row of the ſame. The belly or throat fins are connected on each ſide by their extremities, and form one circular fin like a funnel, by which they are enabled ſo faſten themſelves to the bottom of the ſea, and to rocks under the water; and this ſo firmly, that it is difficult to oblige them to remove. The mouth is like that of a Sun fiſh, but larger, being three inches broad from corner to corner. The lips are fat and thick, the jaws full of teeth, and the noſtrils are tubes or pipes which riſe above the ſkin.

The POGGE, ſo called in the north of *England*, is of the length of two palms, and has a triangular depreſſed head, which is not ſmooth but angular, and about two inches broad. Both ſides have tubercles upon them, which give this fiſh a very rugged aſpect. The fore part is furniſhed with a great many ſlender barbs, and the hinder is armed with prickles. The ſnout is flat, and furniſhed with four prickles, of which the two foremoſt are in the ſhape of a half moon. The mouth is ſmall, ſemicircular, and at the corners, and under the chin, there are ſeveral barbs. The trunk of the body near the head is of the figure of an octagon, or eight cornered, and near the tail it is like a hexagon, or ſix cornered. It is covered all over with bony ſcales, in the middle of each of which there is a hooked tubercle, which makes this fiſh ſeem full of angles; but the body near the tail becomes very ſlender. The belly is flat and white, in the middle of which the vent is placed, and the back is brown ſpotted with black. It has no teeth, but the lips are as rough as a file. *

* This fiſh is frequently taken in *Yorkſhire*, and the biſhoprick of *Durham*. The fleſh is accounted exceeding good eating, when the head is taken off, and the body ſtripped of its armour.

The ARMOUR FISH is ſomewhat leſs than a foot in length, and is four inches in breadth. A ſmall part of the belly is griſtly, except which this fiſh is covered with a hard thick bone, but in a different manner; for the head and fore-part are covered with bony plates, extending from the back to the belly, and advancing over each other. It is armed with three ſtrong pointed bones thick ſet, one of which is placed near the back, and one near each gill. Theſe bones are ſix inches long, and ſo fixed in ſockets, that the fiſh can point them in any direction to defend itſelf. However, it has no teeth, but the want of them is fully compenſated by his weapons and armour.

The TAMOATA, ſo called by the *Braſilians*, but by the *Portugueſe* SOLDIDO, is a river fiſh three inches and a half in length, from the back part of the head to the beginning of the tail. The head is about an inch long and a little more broad, almoſt like that of a Frog. The mouth is not large, nor has it any teeth, but on each ſide of it there hangs a barb an inch in length. The eyes are very ſmall, and have an iris of a gold colour; all the upper part of the head is covered with a hard ſhell like a helmet; and the whole body cloathed as it were with armour, conſiſting of oblong ſcaly pieces, which are minutely ſerrated round about, and are placed in a quadruple row. There are ſcales on the middle of each ſide, on the back and lower part of the belly, which, as it were, grow together. The colour is every where of an iron grey, but more particularly on the head.

CHAP. XIV.

Of ſmall Fiſhes, that have two fins on the back with ſoft flexible rays.

THE SMALL DRAGON FISH is nine inches in length, and taken in the ſea. *Ray* ſays, he has never ſeen any of this kind above ſix inches long. It has an oblong body depreſſed, and almoſt ſquare, and

and the colour on the back is of a yellowiſh green, but on the belly white: the ſides are ſpeckled with ſmall ſpots of a blueiſh ſilver colour. This fiſh may be known from all other ſmall fiſh by the ſpots juſt mentioned, by the round holes of the gills, by three pointed prickles at the extreme corners of the gills, by the rays of the fore back-fin riſing higher than the membrane that connects them, and by the jaws being furniſhed with exceeding ſmall teeth. It is a common fiſh at *Venice* and *Rome*.

The ANGUELLA, ſo called at *Venice*, is a ſmall oblong ſlender tranſparent fiſh, except where the back bone and the inteſtines lie. The tail is forked, and the back is beſet with black ſpecks. The eyes are depreſſed, and large in proportion to the bigneſs of the fiſh. The mouth is ſo formed, that the lower jaw ſtands out farther than the upper, and makes, as it were, a cover for the mouth. The ſides are of a ſilver colour. This fiſh is very common at *Venice*.

CHAP. XV.

Of Braſilian fiſh with two fins on the back.

THE AMORE PIXUMA has a broad head, and a wide mouth with teeth. The body is oblong, the colour on the back is of a dark iron, and the belly, which is prominent, is white. The ſkin is ſoft, and the tail is roundiſh at the circumference.

The AMORE GUACU is about ſix inches in length, with an oblong body and a thickiſh head. The gills are large, and the mouth is furniſhed with ſmall teeth. The eyes are ſmall, and have a gold-coloured circle round the pupil. The tail is of an oblong ſquare form, and terminates in a ſemicircle. The ſcales are large for the ſize of the fiſh, which is of an iron colour, with a whitiſh belly.

The AMORE TINGA is of the ſame ſhape with the former, but leſs, and the ſcales are whitiſh every where, except ſome brown ſpots.

The TAREIRA D'ALTO has a round body, ten inches long and five thick; but it grows gradually leſs towards the tail. The head is like that of a ſnake, and over the eyes, which have a yellow iris, there are two tubercles. The mouth is wide, yellow within, and ſharp at the end of the jaws; as alſo furniſhed with very ſharp teeth. All the fins are as thin as poppy leaves, being ſupported by ſoft ſpines. The ſcales are in the ſhape of a half moon, and ſo neatly put together, that the fiſh is ſmooth to the touch. The belly is white, and the ſides and back are ſtreaked with yellow and green lines, running according to the length; but the edges of the ſcales are brown. There are three brown fins on the back, but the reſt are yellow, and the tail is ſtreaked with brown.

The PIRACOABA is a foot in length, and has a wide ſharp mouth without teeth, likewiſe the upper jaw is longer than the lower; and the upper part of the mouth is prominent with a round griſtly cone. The eyes are large, and have an iris of a gold colour. On each fin behind the gills, there is a white barb, conſiſting of ſix thickiſh hairs almoſt three inches long. The ſcales are of a middle ſize, and of a ſilver colour; but towards the top of the head and back, they are a little hoary: all the fins are of a light aſh colour, except thoſe behind the gills, which are blackiſh.

The PIABUCU is a ſmall fiſh, about ſix inches long, and an inch and a half broad. The belly is a little prominent, and the iris of the eyes of a ſilver colour, but on the upper part, there is a little mixture of red. The tail is forked, the ſcales of a ſilver colour, and there is a broad white line runs along the ſides, above which the back is of an olive colour mixed with a ſhining green; the fins are white.

CHAP. XVI.

Of barbed, and prickly Braſilian Fiſh.

THE *firſt kind* has an oblong body of about a foot in length, and the beginning of the back is

is a little raiſed. The head is of the ſhape of a cone, and covered with a hard ſhell to the beginning of the riſing of the back. The barb conſiſts of ſix threads, of which the four lower are an inch and a half long, and the two upper as long as the fiſh itſelf. Before each gill fin, there is a ſtrong toothed bony prickle, as well as before the forward back fin, and is of the ſame length as that; and the tail is forked. It has no ſcales, but is covered with a ſkin that ſhines like ſilver. All the fins are of a ſilver colour, as well as the barb on the head; and through each ſide to the tail there runs a line of a ſilver colour. The eyes are large, and the mouth ſmall without teeth.

The *ſecond kind* has an oblong body, and is above two feet in length. The head is compreſſed and flat; and the mouth is blunt. The head is covered with a ſhell like the former, which has ſmall points thereon, and the eyes are ſmall, and near four inches diſtant from each other. The barb conſiſts of ſix threads, whereof the outer are four inches long, but the reſt are ſhorter. It has thorns or prickles like the former, and the tail is divided into two horns. All the upper part of the body and ſides, as far as the belly, are white, with a mixture of yellow and gold colour. All the fins and the tail are grey; but the belly is white. This likewiſe has no ſcales.

The *third kind* is of the ſame ſize and ſhape as the former; but the barb conſiſts only of four threads, two of which are eight inches long, and pretty broad, being in the ſhape of a tongue; the other two are very ſhort. Near the back fin there is another of the ſhape of a tongue nine inches long, as alſo behind the gill fins. In other things it is like the former.

The *fourth kind* has likewiſe an oblong body, ten inches in length, and the head is broad and flat, with a mouth that is void of teeth. The barb conſiſts of ſix threads, of which the four lowermoſt are one, and the upper two inches in length. The eyes are ſmall, of a blueiſh colour, and placed four inches from the mouth. The top of the back is covered with a hard ſhell, and on each ſide behind the gills there is a narrow ſhell that covers the ſides. The forward back fin has a bony

thick ſerrated thorn, two inches and a half broad, and the tail is forked. The head, beginning of the back and ſides, that are covered with ſhells, are of the colour of umber; but the other parts are lighter, though variegated with duſky ſpots of a middle ſize. From the broader end of the ſhell to the tail on each ſide, there is a row of ſhort ſharp teeth, with their points turned backward, that run in a ſtraight line.

The *fifth kind* is like the former, and ſpotted with large round ſpots; but it is without teeth on the ſides; and of the ſix threads of the barb, two are longer than in the former.

The NHAMDIA, ſo called by the *Braſilians*, but by the *Portugueſe* BAGER DE RIO, has a body twelve or fourteen inches long, and the head is compreſſed as in the former, with a mouth furniſhed with ſmall teeth. The eyes are ſmall, and a little protuberant, with a gold coloured iris mixed with umber. The barb conſiſts of ſix threads, two above, and as many below the mouth; the former of which are five inches long, and behind each, there is an oblong dent or pit, in which the beginning of the barb lies, when it is turned backward, as it almoſt always is. Each of the lower is an inch and a half long, and not ſo thick as the upper. The forward back fin is ſquare and large, being ſupported with many ſpines. It has no ſcales, but the head is covered with a hard ſhell, and the upper part of the mouth is of the colour of umber; but the back and ſides are of an aſh colour, with a ſmall mixture of blue. The forward back fin near its riſe is of the ſame colour, but the remaining part is black, and the ſpines are of an aſh colour; the backward fin is of the ſame colour, as well as the back and ſides, and the reſt of the fins, the barb, and the tail, are black; but the lateral lines are red. This fiſh is taken in rivers, and is very well taſted.

CHAP. XVII.

Of ſpinous Fiſh with two Fins on the Back, the foremoſt of which is radiated with Spines.

THE BASS is by many authors called LUPUS, that is the WOLF FISH, on account of its greedineſs. It weighs about fifteen pounds, being not much unlike a Trout in ſhape, only it has a thicker head. The colour on the back is of a blackiſh blue, but on the belly like ſilver. When young, the back is variegated with black ſpots, which vaniſh when the fiſh grows old. The ſcales are of a middle ſize, but thick, and adhere very cloſe to the ſkin. The mouth is wide, as well as the apertures of the gills, and there are rough teeth in the jaws. It has thorns or prickles about its head, and the eyes are large, with an iris of a ſilver colour. The forward back fin is radiated with no more than nine ſpines, and in the palate, there is a triangular bone, beſides two more in the throat. The tongue is broad, ſlender, and rough, there being a rough bone in the middle. The fleſh is extremely well taſted, and exceeding wholeſome. It is an inhabitant of the ſea; for it was never known to enter the mouths of our rivers in *England*.

The SEA PIKE is of the ſhape of the RIVER PIKE; but, in proportion to the magnitude of the body, it is longer and rounder. It is covered with ſmall ſcales, and has an oblong conical ſnout, the lower jaw being longer than the upper, and ending in a ſharp point. The inſide of the mouth is yellow, and the jaws and tongue are furniſhed with teeth. The eyes are large, having each a ſilver-coloured iris, but a little clouded. The tail is forked. This fiſh is an inhabitant of the *Mediterranean* ſea.

The MULLET is much like a DACE in ſhape, with a ſharp ſnout, a flat head, and large ſcales, not only on the body, but on the covers of the gills, as well as all over the head, as far as the noſtrils. The back is of a blueiſh brown, and the belly white. The lateral lines are variegated alternately with black and white,

running according to the length. The eyes have no other skin except their own coats, and the forward back fin is radiated with five long spines. The mouth is without teeth, but the tongue is a little rough, and there are two rough bones on each side the palate; besides a bone at the corner of the mouth beset with prickles.

This fish, when it is at its full growth, is about half a yard long. It visits the rivers on the south of *England*, in the beginning of the summer, with every tide, and returns back when the water ebbs. *

The *American* MULLET is of the size and shape of a middling Trout, with eyes of an oval form, and scales of a silver colour; between the rows of which there are grey lines. On the top of the back there is a fin larger than all the rest, and the tail is forked. All the fins are whitish.

CHAP. XVIII.

Of Fish of the Gurnard kind.

THESE fish are called in *Latin* CUCULI, that is CUCKOWS, from a sort of a cry or grunting which they are said to have; on which account, that is, from their grunting like a Hog, they are called by the *English*, GURNARDS. They have two or three barbs or tufts under their gill fins, which some call fingers. Some of this kind make a shriller sort of a noise, whence they are called Pipers; and they have two very large membranous fins at the gills, with which some of them may be said to fly; as also large bony square heads; but their body grows sensibly more slender from the head to the tail.

The

* The rivers *Exe* in *Devonshire*, and the *Arundel* in *Sussex*, are noted for this fish. The proper baits are red-worms, wasps, and gentles; and at the top of the water, he takes the same flies as the Trout. A lob or marsh worm will do within two feet of the bottom. They are in season from *May* to *September*.

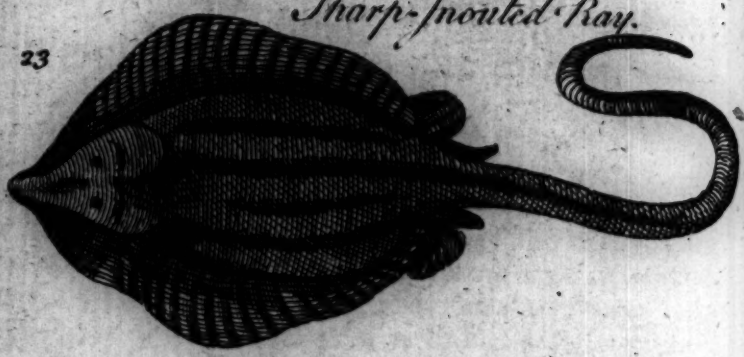
B M

131 Indian Spotted Fish.

38 Orb, or Sea Weather Cock?

Sharp-snouted Ray.

23



Grey Gurnard?

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The GREY GURNARD has a back of a dirty green, ſometimes variegated with black ſpaces, and there are always ſpecks or ſpots of a yellowiſh or white colour. The pointed line is higher and more rough than in others of this kind; and the head is very large, covered with bony plates that have prickles thereon. The ſnout terminates in two horns; the mouth is large, and the jaws, palate, and tongue, are armed with very ſmall rough teeth. The eyes are large, and their iris is of a ſilver colour. The body grows ſenſibly ſmaller from the head to the tail, and there is a furrow in the middle of the back, armed on both ſides with a row of bony thorns, from which the fins ariſe. The teeth of the ſpines are leſs in this than in others of the ſame kind, and it is common in the *Britiſh* ſeas. The fleſh is firm and of a good flavour.

The SEA SWALLOW, called in *Cornwall* the TUB FISH, has a large bony angular head, armed with prickles; and from the head to the tail it becomes ſenſibly more ſlender. The back is of a dirty green, the ſides of a reddiſh colour, and there is a cavity between the eyes; the upper jaw is notched in the middle, but not divided into horns, and the ſcales are ſmall; the teeth are much like the former, but the gill fins are exceeding large, ſtrengthened with a membrane, and extended with branched rays beautifully coloured, the upper edge being of a ſhining blue. In ſome fiſh of this kind, towards the bottom, there are ſeven or eight rays ſpotted with black, in a ſpace of whitiſh green, which makes a very beautiful appearance. Under theſe fins there are three tufts or fingers on each ſide. It is caught in the ſea near *Cornwall*.

The RED GURNARD, or ROCHET, is like the former, only it differs in the ſize; for it never grows ſo large, being very ſeldom above a foot in length; the head is leſs, and the ſpace between the eyes is more narrow; the body and fins are more red, and the gill fins are ſhorter and leſs, not of a blue, but rather of a purple colour on the edges. Likewiſe, the covers of the gills are engraved with ſtreaks or rays, proceeding as it were from a center;

on theſe there are alſo three thorns or prickles, two on the lower part on each ſide, and one on the upper.

The PIPER, ſo called in *Cornwall*, is of the ſame colour as the former, only the head is lighter, tending to yellowiſh. The ſnout is divided into two broad horns, fenced with prickles about the edges. The ſpines on the back are larger and longer than in other fiſh of this kind; and the noſtrils ſtand out, being two ſmall round tubes, as in the bird called the Cuckow. It is common in the *Britiſh* ocean; and, from the noiſe that it makes, it is called a Piper.

The GREATER GURNARD is fourteen inches long, and the back fins are beautifully painted with yellow and red. The ſcales are thick, and ſtick cloſe to the ſkin; and, on the ſides, there are three or four parallel golden-coloured lines, that run according to the length. It is taken near *Penzance* in *Cornwall*.

The KING OF THE GURNARDS is, perhaps, ſo called from the ſize. It is without barbs, the ſcales are large, and the body is reddiſh all over. The eyes are alſo large, and the jaws are as rough as a file. It is frequently caught in the ſea, about the iſle of *Malta*.

The HARWICH GURNARD, with a very long back-fin, has a head larger than the whole body, which is convex above, and marked with ſeveral blue ſpots. The body, from the head to the tail, grows gradually leſs, and has ſix corners or ſides; the upper jaw is longer than the lower, and the mouth is large, and furniſhed with teeth. The two right lines, that run from the head to the breaſt fin, may be called lateral lines. The ſkin is ſmooth, without ſcales, and of a blue colour, as well as all the fins, except the ſecond back fin, which is whiter. It has eight fins, two on the back, two on the breaſt, as many on the belly, and one at the vent and the tail, which makes the eighth. The back fin near the head, is compoſed of three flexible ſoft ſpines, the firſt of which is as long as the body, that is, from the head to the beginning of the tail; the ſecond is three quarters of the ſame length, and the third one half. The ſecond fin

B M

Flying-Fish.

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Lump?

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Pogge?

Star-gazer.

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on the back is not ſo long as the third ſpine of the former, and is compoſed of ten ſimple ſpines, the three laſt of which are the longeſt. The membrane that covers them is white, marked with four double blue lines: thoſe on the breaſt are white ſpotted, and conſiſt of twenty-nine ſpines that are forked at the end, of which thoſe next the belly are ſmalleſt, and thoſe in the middle longeſt. The fins on the belly are blue, and very near thoſe on the breaſt, and armed with five very ſtrong ſpines, of which that in the middle is divided into others that are leſs; the fin at the vent is blue, and conſiſts of ten ſpines, much ſhorter than the ſecond fin on the back, but the two laſt ſpines next the tail are much the longeſt; the tail fin is round, and conſiſts of ten ſpines forked at the end. It is eleven inches long.

The FLYING FISH has a body, which in ſhape and colour reſembles pretty nearly thoſe of a Herring; but the eyes are larger in proportion. It has two pair of fins like wings, the greater of which are placed a little behind the gills, and the leſſer about the region of the vent: they are thin, and variegated with dark duſky ſpots, on a light aſh-coloured ground. With the aſſiſtance of theſe wings they riſe out of the water, and fly a conſiderable way, to avoid the purſuit of the Dolphin. Near the tail it has a narrow fin on the back, and another on its under ſide, of an aſh colour. The tail is of the ſame colour, and forked; but the lower part of the fork is much the longeſt.

The WEAVER, called by ſome authors the SEA DRAGON, is a long fiſh with flat ſides, a crooked belly, and a ſtraight back. The lines on the ſides are partly yellow, and partly duſky, running obliquely from the back to the belly; the ſcales are thin and ſmall, and the head moderately compreſſed; the eyes are placed on the top of the ſnout, and nearer together than in other ſcaly fiſh; the forward back fin has ſix venomous rays; the fin behind this, and almoſt cloſe to it, reaches very near the tail. It ſometimes grows to a cubit in length, and lurks in the ſand, in the ſame manner as the Sand-eel.

⁂ The SCAD, ſo called by the inhabitants of *Cornwall*, and by the *Londoners*, A HORSE MACKREL, is like a common Mackrel in colour, ſhape, and taſte; but it is leſs, and the body is not ſo thick and round, nor ſpotted like it. In the middle of the body, there is a line that runs from the head to the tail, covered with bony plates; but it is not ſtraight, for in the middle it is turned downwards; and at the bending, there are ſmall prickles that grow on the plates. Towards the tail they grow larger and more prominent, being toothed like a ſaw. It is caught in the ſea near *Cornwall*, as well as in other places.

⁂ The UMBRA, called CORVO by the *Venetians*, is a fiſh of the Whale kind, which often weighs ſixty pounds. The ſhape is more compreſſed, and broader and ſlenderer than a Carp, in proportion to its bulk. The back is ſharp on the ridge, and riſes from the head. There are lead-coloured lines, and others of a pale yellow, which run alternately from the top of the back to the bottom of the belly, in an oblique manner, being undulated, and make a very beautiful appearance. The ſcales are of a middle ſize, and the covers of the gills, as well as the head to the mouth, are ſcaly. The head is of a moderate ſize, and the eyes are not large; but the mouth is ſmall, and the upper jaw is longer than the lower. The teeth in the jaws, and the bottom of the mouth, are exceeding ſlender; and from the corner of the lower jaw, there hangs a ſmall ſhort barb. The tail is flat, and terminated almoſt in a right line. It is a very common fiſh in *Italy*.

The GREY GRUNT has a broad crooked back, and is ſix or ſeven inches long, and four broad. The mouth is not large, but it is furniſhed with very ſmall teeth, and the eyes are big, having a white iris. The back fin runs the whole length of the back, and the middle part is ſupported with ſpines; but the rays of the hinder part are ſoft, and there is no furrow to hide them in, as there is for the fore part. All the fins, as well as the tail, are of a ſhining gold colour, and the body is covered with ſcales of a ſhining ſilver colour, mixed with that of gold. On each ſide there are ſeven large ſtripes that run according to the length, as far as

the tail, of a ſhining brown; but in ſome they are of a gold colour. It is taken in the ocean near the iſland of *Jamaica*.

The STAR-GAZER, called at *Rome* and *Venice* LUCERNE and PESCE-PRETE, as alſo BOCCA IN CAPO, is commonly about nine inches in length, and ſometimes twelve, with a large, almoſt ſquare head, that is bony and rough. The body is roundiſh, and all the upper part is of an aſh colour, with a white belly. The ſcales are ſmall, and the lateral lines behind the fin approach each other and deſcend to the middle fin of the tail. The face is flat, looking upwards, whence this fiſh has its name; and the eyes are near each other, being protuberant and ſmall, with golden circles. The mouth is pretty large, and the chin beneath it is almoſt like that of a man. The jaws are armed with teeth, as well as the palate; and the lower lip is fringed with barbs. The whole face, and the covers of the gills, are very rough, with a ſort of warts or tubercles, ſome of which are prickly. This fiſh is frequently taken in the *Mediterranean* ſea; but the fleſh is indifferent.

The PEARCH is generally, when full grown, about twelve or fourteen inches long; and ſometimes, though but ſeldom, they attain to fifteen, which is an extraordinary ſize. This fiſh is hog-backed like a Bream, having a broadiſh body of a duſky yellowiſh colour, with five or ſix ſpaces like girdles, proceeding from the back towards the belly. The ſcales are ſmall, thick, and rough, drying much ſooner than thoſe of any other river fiſh. The iris of the eye is of a yellow or gold colour: the mouth is wide, and the jaws very rough, with ſmall teeth. The belly fins, and the forked tail are of a fine red, ſometimes with a mixture of white; ſome parts of the principal back fin are ſpotted with black; and often the whole fin next the tail is yellow. The covers of the gills end in an acute angle, and the uppermoſt thereof terminates in a prickle.

The fleſh of this fiſh is firm, of an agreeable taſte, of eaſy digeſtion, and very wholeſome; for which reaſon it is called by ſome, the WATER PARTRIDGE. A Pearch is armed with certain ſpines or prickles, with which

which it defends itſelf againſt much larger fiſh: when a Pike comes near, it raiſes them up, and prevents an attack; however, a Pike will ſwallow ſmall Pearches, becauſe they are then too ſoft to do him any harm. The only parts uſed in medicine, are the bones that are found in the head, near the origin of the ſpine of the back. They have the ſame virtue as other abſorbent powders *.

The AMBOINA PEARCH is ſo called, becauſe it is chiefly found in the rivers of *Amboina*. It is about a ſpan in length, and ſomewhat like the common Pearch, both in ſhape and taſte. Its colour is inclining to brown with blue ſtreaks under the head; and the fins below the mouth are alſo blue; but thoſe on the ſides are green and ſpeckled. The figure that *Nieuhoff* has given of it, ſhews ſeveral ſtripes on the ſides very like thoſe of

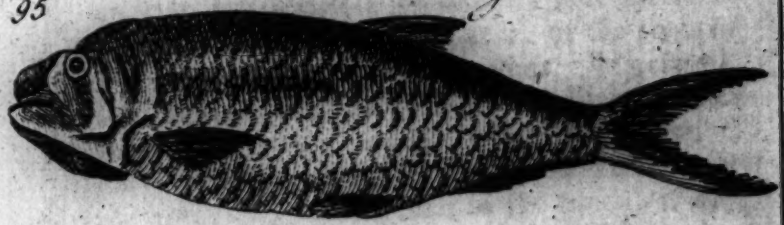
* Though Pearch, like Trout, delight in clear, ſwift rivers, with pebbly, gravelly bottoms, yet they are often found in ſandy, clayey ſoils: they love a moderately-deep water, and frequent holes by the ſides of or near little ſtreams, and the hollows under banks. The Pearch ſpawns but once a year, which is about the beginning of *March*, and the beſt time to angle for him is from the beginning of *May* to the end of *June*, though he is fiſhed for to the end of *September*. He is eaſieſt taken in cloudy, windy weather, and, as ſome ſay, from ſeven to ten in the morning, and from two till ſeven in the afternoon. He will bite very little in winter, unleſs in the middle of a warm day. You muſt give him time in biting, eſpecially when you fiſh with a Minnow or a ſmall frog. The Minnow muſt have the hook put through his back fin, or his upper lip; the frog through the upper part of the ſkin of his leg, and you muſt fiſh with them but little lower than midwater. Your float muſt be pretty large, and many, when they uſe worms, let the bait touch the bottom; but about ſix inches from it is better. If you find a hole of them, you may catch them all, provided you do not drop one off your hook; for, in that caſe, your ſport is over for that day. When you fiſh with a Minnow, whip your hook to a ſmall wire, for fear of a Pike. Bobs, gentles, paſtes, and Roach and Dace cut ſmall, are good baits; but he will not riſe at a fly. When you fiſh at the bottom, in *March*, uſe the red-worm; in *April* the oak-worm, a young frog, or a red ſnail; in *May*, dock-worms; in *July*, a grub or graſs-hopper; in *Auguſt*, red-worms or brandlings; and ſo every month after, always taking care to uſe the bait natural to the ſeaſon. You may ground-bait with lob-worms cut to pieces. He is to be found in moſt rivers in *England*, as well as in ſome ponds.

Amboina Pearch

86

Indian Herring.

95

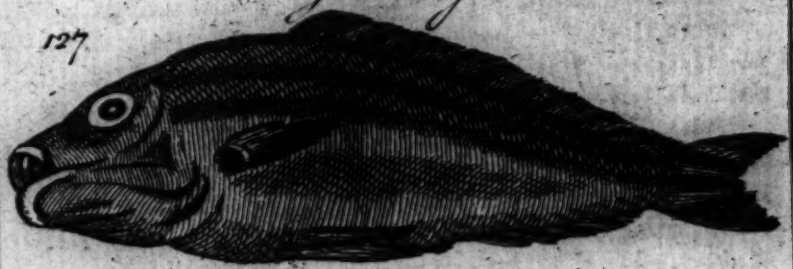


Indian White-Fish?

127

Granting Fish

127



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of a Pearch; and the tail is long and forked, or rather divided into two horns.

The DOREE, which ſignifies, the GILT FISH, has a broad compreſſed body, not unlike that of a Flounder; but it ſwims erect, and not on one ſide as that fiſh does. The head is very large and compreſſed, and the mouth is monſtrouſly wide. The colour on the ſides is olive, and on the middle of each ſide there is a large round black ſpot, by which it may be known from other fiſh of this kind. The forward back fin is furniſhed with ten prickly rays, and as many that are ſoft underneath, which leave the prickles, and by themſelves run to a conſiderable height. There are ſhort rows of prickles in ſome places, that is, at the roots of the back fins, as well as thoſe at the vent. In general, it is a very ſingular fiſh, and is about eighteen inches long, and ſeven or eight broad. The fleſh is tender, and eaſy of digeſtion, being ſo delicate, that ſome prefer it to a Turbot. This fiſh is taken in the ocean, as well as in the *Mediterranean* ſea.

CHAP. XIX.

Of Fiſh without Thorns, with one Fin on the Back.

THE DORADO is a ſea fiſh, which has a ſort of a creſt on the head, joining to a large fin, that runs to the tail; there is likewiſe another that is ſhorter, and runs only from the vent to the tail. The belly fins reach almoſt to the vent, which is placed in the middle of the body, and the mouth is of a middle ſize, having ſmall ſharp teeth in the jaws, palate, and tongue. The eyes are large, the ſcales exceeding ſmall, and the colour of a blueiſh green. The thickneſs of this fiſh grows gradually leſs from the head, and the fleſh is fat, ſweet, and hard, like that of a Tunny.

The DOLPHIN *of the Moderns*, called by moſt authors DORADO, is not of a very agreeable ſhape, for the ſnout is flat and roundiſh, and the body grows very taper from the head to the tail; but its beauty

conſiſts

conſiſts chiefly in its colours, which are very fine. The back is all over enamelled with ſpots of a blueiſh green, which ſhine like jewels ſet in a dark ground. The tail and fins are of a gold colour; and nothing can be more brilliant than this fiſh, when ſeen in the ſea, or when it is not quite dead. It is about ſix or ſeven feet in length, and near the thickneſs of a Salmon. There is a remarkable fin, which runs from the head, along the back, to the root of the tail, which in the middle is ſeven or eight inches broad, and conſiſts of a membrane that feels like leather, and the ſpines thereof are ſoft. There is another oppoſite to this, that runs from the vent to the tail, and is not an inch broad. The tail is about a foot and half long, and is divided into two large horns. The ſcales are very ſmall, and can ſcarce be felt when touched. It is a very ſwift ſwimmer, and will very often accompany a ſhip for a long while together.

The SEA BREAM has a forked tail, and is a flattiſh fiſh, not unlike a Roach. The fleſh is firm and ſolid, and the body is covered with ſcales. It is twenty inches long, ten broad, and the tail is very ſlender. The back is black, but the ſides are of a lighter colour, which on the belly becomes like that of ſilver. The lower jaw has two rows of teeth, but the upper has only one, and theſe are very ſmall. The eyes are large, and the covers of the gills like thoſe of a Salmon. There is only one fin in the middle of the back, which is continued throughout its whole length; and oppoſite to it, at the bottom of the belly, there is another that runs from the vent almoſt to the tail. They are not very common in *England*.

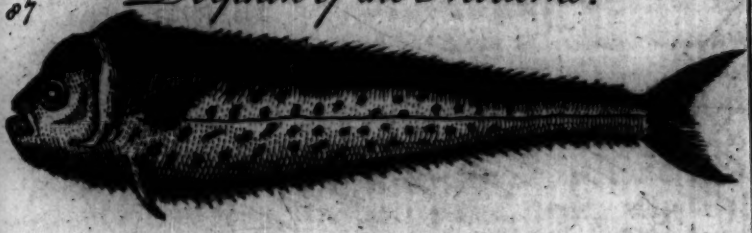
The RAZOR FISH, called at *Rome* PESCE PETTINE, has a very large head, but compreſſed, as well as the whole body, and there is ſcarce any thing that can be called a ſnout; for the line, which terminates the fore part of the head, runs almoſt perpendicularly from the top of the head to the mouth, which is ſmall, and armed with little ſharp teeth, except four, which are placed forward, that are longer. The eyes are ſmall, placed on the top of the head, and at the beginning of the back there is a fin, which is not very broad, though it

Bonetto.

53

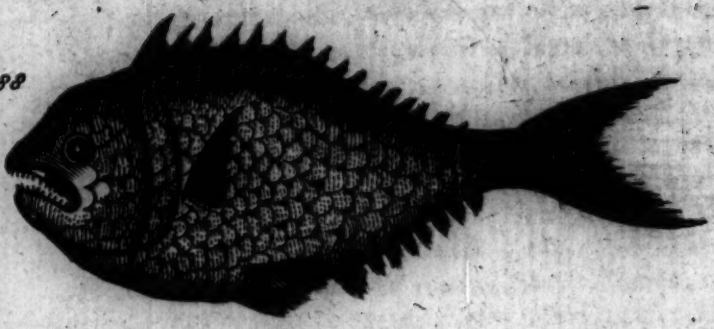
Dolphin of the Moderns.

87



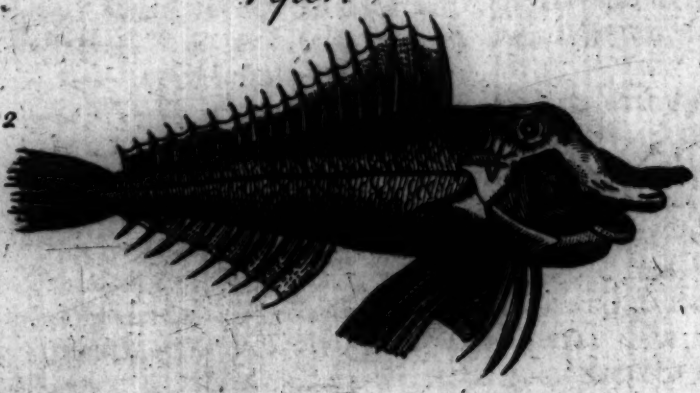
Sea-Bream.

88



Piper.

82



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it runs from thence to the tail. There is another oppoſite to it, on the lower part of the belly, that reaches from the vent almoſt to the tail, which is broad, and covered with large ſcales. The head and covers of the gills are marked with ſeveral blue lines; the belly and tail fins are of a yellowiſh, and greeniſh colour, as it were chequered in a very pretty manner: the back fin is red, ſprinkled with a few blue ſpots; and the reſt of the body is of a yellowiſh red. It is ſeldom above a palm in length, and is ſcarce at *Rome*, though it is common in the iſles of *Rhodes* and *Malta*. The fleſh is tender, yields good nouriſhment, and is eaſy of digeſtion.

The RHAQUUNDA, of the *Braſilians*, has a body near ten inches long, and two broad, being almoſt of the ſame breadth from one end to the other. The head and mouth are made almoſt like that of a Pike; and though it wants teeth, the jaws are almoſt as rough as a file. The iris of the eyes is brown, and from the beginning of the back, there runs a fin almoſt to the root of the tail, which is three inches long, and nearly one broad, except towards the end, where it is a little broader. The tail is covered with a hard black ſhell, and the ſcales are of a middle ſize. The colour of the back and ſides is a dark grey, with a ſilver gloſs, and on each ſide there is a row of round black ſcales, of the ſize of a pea; and between theſe, there are many blue ſpecks. All the fins, and the tail, are of a gold colour; but thoſe on the back are ſpotted with blue. The lateral lines are black, and on each ſide the tail there is a line of a gold colour.

The PARU, of the *Braſilians*, is a broad, roundiſh, but not thick fiſh, being about twelve inches long, and ſeven broad. The back fin, and that which runs from the vent, are about two inches broad, and reach to the tail, and each of them have a prominence at the end, that on the back being five inches long, and that on the belly three. The head is ſmall, with a high narrow mouth, and exceeding ſmall white teeth. The iris of the eyes is yellow. The whole body is covered with middle ſized ſcales, half of which are black, and the other half yellowiſh, in ſuch a manner that the body

ſeems

ſeems to be marked with yellow half moons. Behind the gills, on both ſides, there are yellow ſpots, and the tail is two inches and a half long, and as many broad.

The ACARAUNA, of the *Braſilians*, is of the ſize of the PARU, but not ſo broad, and is covered with blackiſh ſcales. The tail is forked, and on the length of the whole back, as alſo on the bottom of the belly, there runs a ſharp fin, which towards the hinder part, is about an inch broad. The mouth is ſmall, narrow, and furniſhed with exceeding ſmall teeth; and on each ſide near the tail, there is a ſharp ſpine or prickle, almoſt an inch long, which he can conceal in his ſides, or thruſt out ſo as to hurt other fiſh.

The GUARERUA, of the *Braſilians*, has a broad compreſſed body four inches long and three broad, with a little mouth, and very ſmall teeth. On the upper part of the body, and on the belly, there is a long broad fin, which both end in a point like a bodkin. The tail is ſquare, the ſcales black, with a gloſs like ſilk, and yellow edges. All the fins are black, and about the mouth there is a broad line of an iron colour, and another placed perpendicularly over it. The body is ſurrounded with three ſtripes, whereof two run through the broad and hinder part of the fins; likewiſe, the tail is cut by ſuch another ſtripe.

The HERRING is a well known fiſh, nine inches, or a foot long. That which diſtinguiſhes this fiſh from all others, is a ſcaly line that runs along the belly from the head to the tail; the colour on the belly and ſides is of a ſhining ſilver; beſides, the ſcales are large, and come regularly off. It has no ſpots, and the belly is ſharp like a wedge, with red eyes. The tail is forked, and the ſwimming bladder is of a ſilver colour. The noſtrils of this fiſh are very apparent, and have two apertures, of which the foremoſt cannot be ſeen with the naked eye; it is a little nearer the ſnout than the eyes. The lateral bone that covers and cloſes all the lower parts, is ſlightly dentated on the edges; there is a long ſpace, with teeth in the middle of the fore part of the palate; or rather two rows of ſmall teeth ſeated in a right line, according to the length of that part of the palate

palate neareſt the end of the ſnout. The lower jaw is a little longer than the upper, and there are very ſmall teeth at its extremity; but thoſe at the extremity of the upper jaw are ſo ſlender they can hardly be ſeen. The tongue is ſharpiſh, free, and diſengaged below, of a blackiſh colour, and armed with ſmall teeth turned backwards. There is generally a red or violet ſpot at the extremity of the covers of the gills, the remaining parts of which are of a ſilver colour, and conſiſt, below, of three or four bony plates, and eight ſpines a little crooked, joined together by a membrane. The ſcales are large in proportion to the body.

A Herring dies immediately after it is taken out of the water, whence the proverb ariſes, *As dead as a Herring*; the fleſh is every where in great eſteem, being fat, ſoft, and delicate, eſpecially if it be dreſt as ſoon as caught; for then it is incomparably better than on the next day. There are vaſt quantities of theſe fiſh taken, ſalted, ſmoak-dried, and conſumed all over *Europe*. They make a progreſs every year from the ſeas near the *North* of *Scotland*, into the *Britiſh* channel, coming, as ſome ſuppoſe, in purſuit of worms and ſmall fiſh, which at that time abound there. There is alſo plenty near *Norway* and *Denmark*, from whence they proceed annually, as far as the coaſt of *Normandy*.

Herrings are diſtinguiſhed into ſix different ſorts; as the Fat Herring, which is the largeſt and thickeſt of all, and will keep two or three months. The Meat Herring, which is likewiſe large, but not ſo thick nor ſo fat as the former; the Night Herring, which is of a middling ſize; the Pluck, which has received ſome damage from the nets; the Shotten Herring, which has loſt its roe; and the Copſhen, which by ſome accident or other has loſt its head *.

As

* The Herring-fiſhery is begun, both by the *Engliſh* and the *Dutch*, towards the latter end of *June*; but the *Dutch* ſend abroad forty times the quantity of Herrings that the *Engliſh* do, eſpecially to *Germany* and the *Baltic*, though this fiſhery lies along the coaſts of *Scotland* and *England*, and the *Dutch* have ſcarce a Herring on their own. As this fiſhery was the principal foundation of the *Dutch* greatneſs, ſo is it ſtill one of the greateſt ſupports

As for the medicinal uſes of Herrings, it is ſaid, that the aſhes of one, taken to the quantity of a dram in a glaſs of white wine, is good for the gravel. Sometimes ſalt Herrings are applied to the ſoles of the feet of patients in a fever, to divert the humours from the head.

The

ſupports of their ſtate. Sir *Walter Raleigh* was of opinion, that they made ten millions *per annum* profit of this fiſhery in his time; and the great *De Wit* aſſures us, that they employed a thouſand buſſes therein, from twenty-four to thirty tons each, which are now encreaſed to ſeventy, and ſome to an hundred and twenty tons burthen. Theſe buſſes, with the veſſels that attend them, are employed in carrying Herrings all over *Europe*; and thus this trade, beſides finding employment for upwards of an hundred thouſand hands on ſhore in their maritime provinces, is the great nurſery of their ſeamen. It might undoubtedly be of equal advantage to this nation, if properly attended to. It has been ſufficiently proved, that *Great Britain* might carry on this fiſhery cheaper, and to greater advantage, than the *Dutch* can; for they are every year obliged to begin their fiſhery ſix hundred miles from home, and do part of their buſineſs at ſea. They ſend out buſſes of about one hundred tons, with fourteen or fifteen hands, and proviſion for three months. They drive at ſea, and are forced to cure and pack their fiſh, mend and dry their nets, &c. on board: ſo that, computing the expence of wear and tare, proviſions and wages, every barrel of Herrings ſtands them in ſix ſhillings as ſoon as taken. On the contrary, theſe ſhoals of Herrings being on our own coaſts, and even in our harbours, bays, and roads, our people may lay on ſhore every night; and, with two of their boats, called three-men and five-men cobles, (having perſons ready to take off their fiſh, to cure and pack them) may take as many Herrings in a month, as a *Dutch* dogger, of one hundred tons and fifteen men, can do in three lying out at ſea. Thus our fiſhermen, being employed on the coaſt by thoſe who will take them off their hands immediately, may deliver them at twelve-pence, and ſometimes ſix-pence the barrel; which low price, in the prime coſt, muſt enable us to underſel the *Dutch*, who are at ſix ſhillings charges for every barrel of Herrings they take, as they fall from the net. However, let us return to the little uſe we make of this valuable fiſhery.

The beſt time to catch Herrings, on the coaſts of *Norfolk* and *Suffolk*, is from the latter end of *September* to the latter end of *October*; and the nets they make uſe of are about twenty-five yards long, and five deep. They ſometimes faſten ſo many of theſe nets together, as will take in a mile in compaſs. They judge where the Herrings lie, by the hovering and motion of the ſea-birds, which continually purſue them in expectation of prey.

The

The PILCHARD is very like a Herring, but differs from it in ſome particulars; it is a third part leſs, and for the ſize, has a broader body. The belly is not ſo ſharp, and near the upper corner of the gills there is a black ſpot. There are no teeth either in the jaws, the tongue,

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The fiſhermen row very gently along, letting the nets fall into the ſea, and taking their courſe, as near as they can, againſt the tide. As ſoon as any boat has got its load, it makes to the ſhore, and delivers it to thoſe that waſh and gut them.

Theſe Herrings are put into a tub with ſalt or brine, where they lie for twenty-four hours, and are then taken out and put into wicker baſkets and waſhed. After this, they are ſpitted on ſharp wooden ſpits, and hung up in a chimney, built for that purpoſe, at ſuch diſtances, that the ſmoke may have free acceſs to them all. Theſe places will hold ten or twelve thouſand at a time; and they kindle billets on the floor in order to dry them. This done, they ſhut the doors, having before ſtopped up all the air-holes. This they repeat every quarter of an hour, inſomuch that a ſingle laſt of Herrings requires five hundred billets to dry them. A laſt is ten barrels, and each barrel contains about one thouſand Herrings. When they are ſmoke-dried in this manner, they are called Red Herrings.

Pickled Herrings are cured after a different manner. When they are deſigned for the white pickle, as ſoon as they are taken out of the ſea, one of the crew, appointed for that purpoſe, cuts them open, and carefully ſeparates the guts from the roes, the firmneſs of which is a great mark of their being well done. Then caſting away the guts, and leaving the roes whole, the fiſh are firſt waſhed well with water, and then put into a ſtrong brine that will bear an egg, where they are ſuffered to lie fourteen hours. They are then taken out, and, when well drained, are regularly diſpoſed in rows in barrels, preſſing them well down, and ſtrewing a layer of ſalt both at the bottom and top. When the barrel is thus filled, they ſtop it cloſe down, leſt the air ſhould get in, or the brine flow out, either of which would prejudice the fiſh. The longer they lie thus packed, and kept from the air, the leſs ſalt they taſte; for all fiſh, different from fleſh, grow better by lying ſome time in pickle; and the Herrings cured by the *Dutch*, for this reaſon, taſte better than ours, which are generally uſed too ſoon.

Herrings always ſwim in ſhoals, delighting to be near the ſhore. They ſpawn but once a year, which is about the beginning of *November*, a little before which, like moſt other fiſh, they are in higheſt ſeaſon. There are likewiſe Herrings on the coaſt of *North America*; but they are not in ſuch plenty as in *Europe*, and they never go further ſouth than the rivers of *Carolina*. There are none near *Spain*, *Portugal*, in the *Mediterranean*, nor on the coaſt of *Africa*.

tongue, or the palate. The fleſh is firmer, and is by ſome preferred to that of a Herring, but without reaſon. If you take a Pilchard by the back-fin it will hang even, which a Herring will not do *.

The SPRAT, Mr. *Ray* takes to be nothing elſe but a young Herring or Pilchard; becauſe this fiſh exactly reſembles either the one or the other in every particular except the ſize; and he likewiſe thinks they have much the ſame taſte.

The SHAD, called by ſome, the MOTHER of HERRINGS, differs from a Herring, in being broader and not ſo thick, but more compreſſed on the ſides; in being larger, for it grows to the length of a cubit, and is four inches in breadth, weighing four pounds. It has a black round ſpot on both ſides, near the gills, and ſix or ſeven leſs, placed in a right line towards the tail, in which it agrees with the Pilchard. Likewiſe it enters the mouths of rivers, which Herrings do not. It paſſes into the river *Severn* in the months of *March* and *April*, at which time they are fat and full of ſpawn; but in *May*, they return back to the ſea, very lean and prodigiouſly altered; in ſome rivers, as the *Thames*, they ſtay till *June* or *July*; and the fleſh would be pretty good, if it was not ſo full of bones. The eyes and mouth are large, and the upper jaw only is furniſhed with teeth. The tongue is ſmall, ſharp, and a little blackiſh. There is ſuch a difference between the *Thames* Shad, and that of the *Severn*, that they do not

* The Pilchard is a fiſh of paſſage, and ſwims in ſhoals, in the ſame manner as Herrings. The chief fiſheries for them are along the coaſt of *Dalmatia*, to the ſouth of the iſland of *Iſſea*, on the coaſt of *Bretagne*, from *Belle-iſle* as far as *Breſt*, and along the coaſts of *Cornwall* and *Devonſhire*. The ſeaſon for fiſhing is from *June* to *September*, and ſometimes they are caught on the coaſts of *Cornwall* to *Chriſtmas*. On the coaſts of *Devonſhire* and *Cornwall*, they ſet men to watch on the tops of mountains and cliffs, whom they call *Huers*, who know when a ſhoal of Pilchards are coming by the blackneſs or purple colour of the water in the day time, and in the night by its ſhining. When the *Huers* perceive, by theſe marks, where the fiſh are, they direct the boats and veſſels, by the uſual ſigns, how to manage their nets, which they call Saines; and in theſe they often take an hundred thouſand Pilchards at a draught. This fiſhery yields great profit to the people of thoſe counties.

not ſeem to me to be the ſame fiſh; for the *Severn* Shad eats much the beſt, and is not ſo full of bones *.

The leſſer *Indian* HERRING is broader and ſhorter, though of the ſame colour with the common Herring. The tail is forked, and the head is of an uncommon ſhape, with a large ſnout and eyes. They ſwim in large ſhoals together with the Herrings, principally on the coaſt of *Malabar*. Theſe fiſh will take ſalt like other Herrings, which is an unuſual property in theſe parts; and by this method, they are carried all over the *Eaſt-Indies*.

The ANCHOVY is about a palm in length, and proportionally thick: they are only taken in the *Mediterranean* ſea. There is a ſort near *Cheſter*, that are longer and thicker than a man's thumb, which however are different from thoſe of the *Mediterranean*. They have a rounder body than the Herring, and are not ſo compreſſed; they are alſo tranſparent, except where the ſpine of the back prevents it, and their colour is nearly like that of a Sprat. They have a ſharp ſnout, and the upper jaw is longer than the lower; but the mouth is monſtrouſly wide in proportion to the ſize of the fiſh; likewiſe, the apertures of the gills are very large, as well as the eyes. It has this peculiar property, that it will diſſolve almoſt in any liquor, when it is ſet over the fire †.

The GOLDEN-ANCHOVY is an *Eaſt-Indian* fiſh, and is ſo called on account of its ſhining golden colour. It has a very large long mouth, armed with ſharp teeth, and if the body had been more ſlender, it might have been placed among the Eels.

The ARGENTINA, ſo called at *Rome*, has an oblong round body void of ſcales, and is like a Pike. Above the lateral lines, it is of a greeniſh aſh colour, but beneath them of a ſilver colour, as if leaf ſilver had been laid thereon, eſpecially over the covers of the gills.

The

* Shads will take red-worms, waſps, and gentles, and are in or near ſalt waters, when the tide ebbs and flows. They bite at the ſame times as the Flounder.

† They moſt commonly fiſh for Anchovies in the nights of *May*, *June*, and *July*; for in theſe three months they leave the ocean, and paſs up the *Mediterranean* towards the *Levant*.

The ſnout is oblong, the mouth of a moderate ſize; but there are no teeth in the jaws, and yet there are ſix or eight crooked ones near the end of the tongue. The eyes are large, having a ſilver coloured iris, and the brain may be ſeen through the ſkull. There is a fin on the back, about the middle of its length, ſupported by ten rays. The tail is forked, but the principal mark, by which it may be known from all other fiſh, is the air bladder, which is conical at both ends, and outwardly looks as if it was covered with poliſhed ſhining leaf ſilver. This is made uſe of to counterfeit pearls, and by this means they are made like the right ſort. It is often brought to the fiſh-markets at *Rome*.

The GAR-FISH or HORN-FISH, is a long ſlender roundiſh fiſh, and yet a little broad at the bottom. The back is greeniſh, and there are ſeveral marks by which it may be diſtinguiſhed from all other fiſh. The ſnout is very long, ſharp, ſlender, and each jaw is armed with extremely ſharp teeth; there is a ſingle ſtripe that runs from the mouth to the vent, and there is no ſign outwardly of the ſtomach and inteſtines; the ſpine of the back when it is boiled, becomes green, and the upper jaw is moveable as in the Crocodile. The belly and ſides are of a ſilver colour, the back of a blueiſh green, and the tail is forked. The lateral lines that run along the ſides are ſcaly, but the reſt of the body is ſmooth. It does not grow to any large ſize, for ſix of thoſe that are uſually taken, will not weigh a pound; and yet there have been ſome caught that have weighed two or three pounds each. There is another ſpecies of this fiſh, which is ſaid to be much larger.

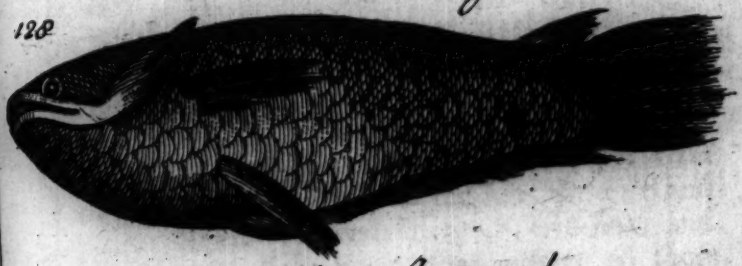
The ELEPHANT's TRUNK FISH is of the ſize of a large Smelt, and has a roundiſh body elegantly ſpotted, with a broad ſtreak of a greeniſh colour running down the middle of the ſides. The under jaw is very long, and terminates in a point almoſt as ſharp as a needle. The taſte is much like that of a Smelt.

The TOBACCO-PIPE FISH is three or four feet long, and has a body like an Eel. The ſnout is ſharp at the end, and the mouth is without teeth. The upper jaw is ſhorter than the lower, and both are a little pointed. The lower jaw is ſcarce two inches long,

and

East Indian Hog Fish

128



East Indian Gurnard

128

Indian Eel-Pout

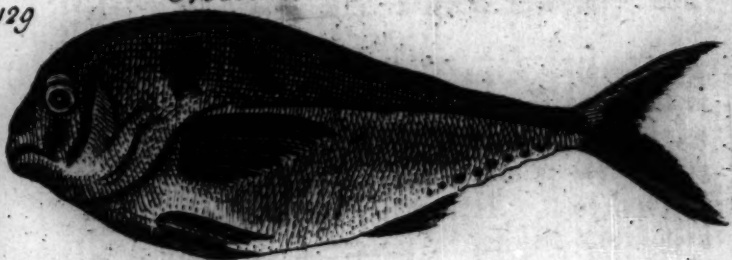
128

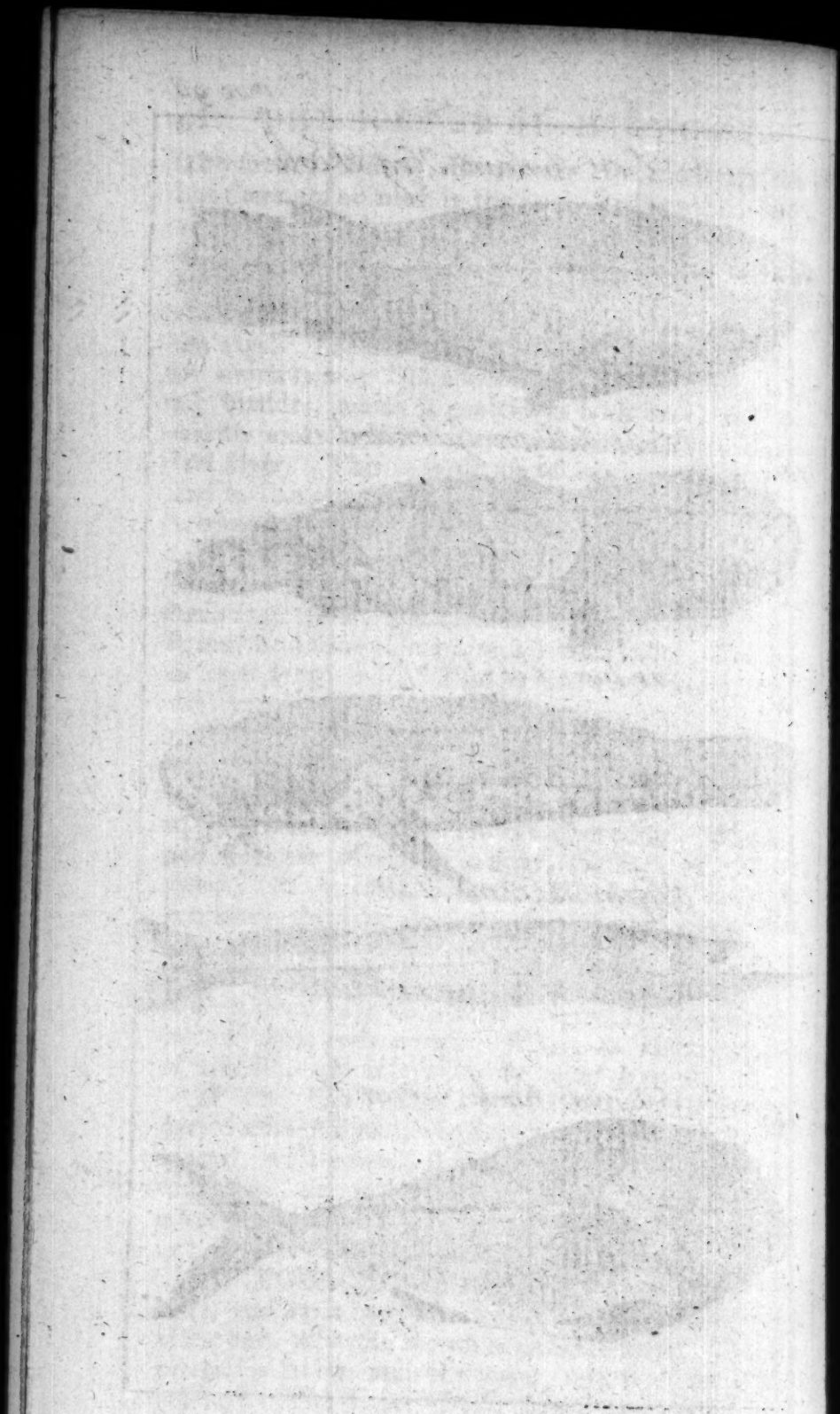
Elephants Trunk Fish.

96

Crook-back Fish.

129





B M

and conſequently the cleft of the mouth muſt be exceeding ſmall; the upper jaw is bony or horny, and elegantly ſtreaked. The head is one third part as long as the whole body. The thickneſs of it behind the eyes is five inches, and then it gradually decreaſes till it comes to three at the mouth. The eyes are of the ſize of a hazel nut, and almoſt of the ſame ſhape, with a ſilver iris, mixed with a little red on the fore and hinder parts. Behind the vent there are two fins, and as many on the top of the back, that anſwer to thoſe below, which is peculiar to this fiſh. The ſkin is as ſlippery as that of an Eel, and the whole back and ſides are of a liver colour. There is a double row of blueiſh ſpots on the head, and another on each ſide. The belly is whitiſh.

The PIRAYA, and PIRANAH, of the *Braſilians*, is a foot in length, and ſix inches broad. It is hog-backed; the head is blunt like that of a Dorado, and the mouth cannot be ſhut cloſe, for it has teeth that cover the lips; theſe are white, triangular, and exceeding ſharp, being fourteen in number in each jaw, and placed in a ſingle row. The eyes are ſmall, and of the colour of chryſtal; and a fin begins from the vent, which is armed before with a ſtrong ſpine; but the other parts are ſoft, and covered all over with ſcales reaching to the root of the tail. The tail is divided into two horns, and the colour of the upper part of the body, to the lateral lines, is a light aſh colour, mixed with a little blue; but the edge of every ſcale ſhines with flame and blueiſh colours. The lower part is of a dark yellow, as well as the fins. It delights in the muddy bottom of a river. There are two other kinds of this fiſh, which differ a little in colour and ſize.

The PIKE, or PICKEREL, has a roundiſh oblong body with a flat head, and ſquare back. The ſnout is very prominent, almoſt like the bill of a duck; but the lower jaw is ſomewhat longer than the upper. The mouth is very wide, and the tail forked. The body is covered with ſmall thick ſcales, which are moiſtened on the edges with a kind of ſlime that has a greeniſh caſt; and the younger the fiſh is, the greener he ap-

pears. The back and ſides, when turned towards the light, appear to have ſomewhat of a golden hue. The ſides are ſpotted with yellow, and the belly is white; but on the tail there are duſky ſpots and reddiſh lines, eſpecially towards the corners. The teeth on the lower jaw are crooked, and there are none in the upper; but on the palate there is a triple row. The tongue is broad, black, a little forked, and rough with teeth; and the eyes are of a gold colour, ſeeming to be a little ſunk into the head. The head and gills are ſpotted with a variety of ſmall holes *.

Some

* Pike will ſwallow other fiſh almoſt as big as themſelves, not excepting thoſe of their own kind. The uſual time of their ſpawning is in *March*, and ſometimes ſooner, if the ſpring is forward. They are prodigious breeders, for in one roe there were 148,000 eggs. They are in ſeaſon all the year, except in ſpawning time, and about ſix weeks after it. The fleſh is white, firm, dry, and ſweet; but, when they weigh above twelve pounds, they contract a ſort of rankneſs.

Pike are found in many rivers in *England*, as well as in ſome lakes and ponds. They haunt unfrequented places, that are ſhady, among ruſhes, water-docks, weeds, and under buſhes, on a ſandy, chalky, or clayey bottom, and are fond of any part of a river, where a brook or ſpring runs into it. They are upon the clear and gravelly ſhallows from *May* to *September*, and then retire into deeper waters. He takes all baits but the fly, the principal being large Gudgeons, Roach, or ſmall Dace, of which the two laſt are his favourites. For want of theſe, you may bait with Minnows, Loaches, Bull-heads, and Bleaks, ſmall Grigs, or a bit of an Eel; but, whatever bait you uſe, it muſt be freſh and ſweet. In *July* young frogs, and in winter fat of bacon, will allure him. They bite early and late from *April* to *July*: three in the afternoon is a good time, from *July* to *September*; in the winter months all day long, but ſeldom in the night at any time. The beſt ſport with him is in clear water and a gale of wind, in a dark, cloudy day; and in muddy rivers only after a flood, when the water is becoming clear. In hot, bright, ſultry weather, when he ſuns himſelf at the top, he will not bite at all; nor in dark, rainy weather, when the water is diſcoloured by the ſwellings of land-floods. You muſt give him time to pouch the bait, and ſtrike him directly upright. You may uſe either the ledger or walking-bait. Let your rod be long, and uſe ſtrong tackle, with braſs wire next your hook. Never let your fiſh-bait lie ſtill, but move it up and down, taking care to ſink it not above half a yard under water. Give him plenty of line, and his own time; and, when he returns and goes off again, ſtrike briſkly, but not too hard. He is alſo taken by the trowl, the ſnap, and ſnaring.

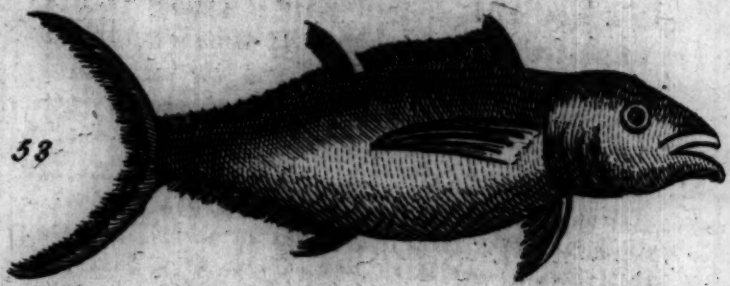
30
MAR

Sturgeon?

99

Albicore?

58



Butter-Fish?

121

Bald-Pate Fish?

126

Some have employed the fat, the gall, the lower jaw, and the ſmall bones that are found in the head of this fiſh, in medicine. The lower jaw is abſorbent and detergent; many pretend it is a ſpecific in the pleuriſy and quinſy; but they are ſeldom uſed at preſent for theſe purpoſes, unleſs among the *Germans*.

The STURGEON is a long fiſh, with a five-cornered body, ſo formed by five rows of horny ſcales, on each of which there is a thorn that is very ſtrong and crooked. The upper row of ſcales, which runs along the middle of the back, are larger, and riſe higher than the reſt, and their number is not exactly the ſame in all, there being eleven in ſome, and in others twelve or thirteen. This row reaches to the back fin, and there ends. The lateral rows begin at the head, and end at the tail, conſiſting of thirty, or thirty-one ſcales. The lower rows, which bound or terminate the flat part of the belly, begin at the foremoſt fins, and end at the ſecond pair, containing each eleven, twelve, or thirteen ſcales. Beſides theſe five rows, there are only two ſcales in the middle of the belly below the vent. The head is of a moderate ſize and rough, with very ſmall prickles, as has the reſt of the body between the rows of the ſcales. The eyes are very ſmall, in proportion to the bulk, and of a ſilver colour; the ſnout is long, broad, and ſlender, ending in a point. In the middle of the lower part of the ſnout, which is extended beyond the mouth, there are four barbs placed in a right line which croſs the ſnout tranſverſely. The mouth is ſmall, void of teeth, and placed over againſt the eyes; and it has a kind of ſmall tube or pipe, which it can draw in or thruſt out at pleaſure. There are no jaws, for which reaſon it is plain that it gets its nouriſhment by ſucking. The tail is forked, but in ſuch a manner, that the upper part ſtands out much farther than the lower. The colour of this fiſh is of a duſky olive, or dark-grey on the back; but the belly is of a ſilver colour, and the middle part of the ſcales is white.

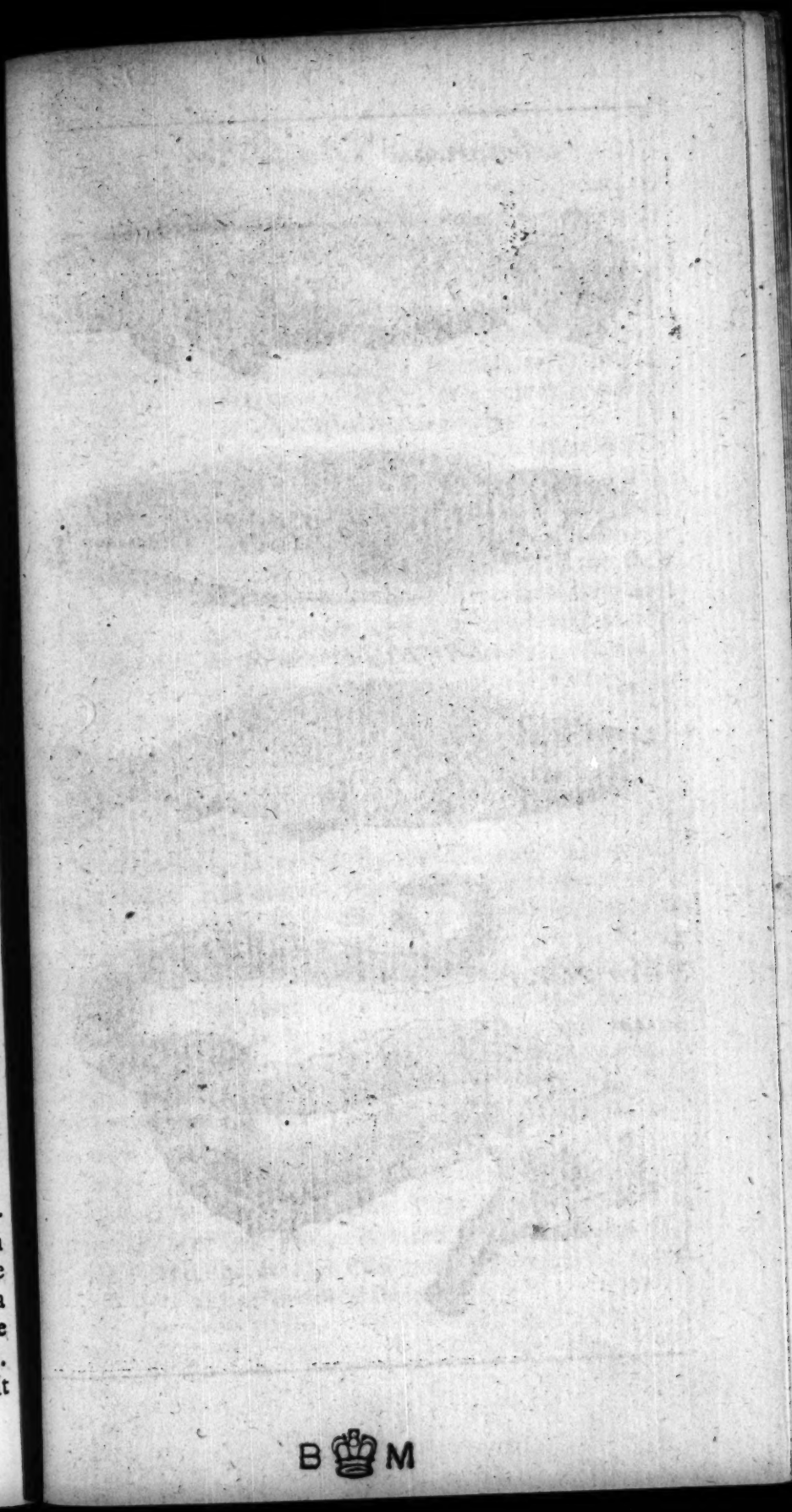
They are brought daily to the markets of *Rome* and *Venice*, from whence it is plain that they abound in the *Mediterranean* ſea. Yet they are but ſmall, as they al-

ways are when they keep conſtantly in the ſalt water; but when they enter rivers, and continue there, they grow to a monſtrous ſize, ſome of them having been found to be eighteen feet in length; and they ſometimes will weigh upwards of two hundred and ſixty pounds. The fleſh is very common here in *England*, but then it is brought from diſtant places in pickle; however, they ſometimes come up the *Thames*, and other rivers, though but ſeldom.

It was formerly in great eſteem among the *Romans*, and ſome pretend, that thoſe caught in rivers are beſt; while others affirm, that thoſe taken in the ſea are much finer eating, provided it be at a good diſtance from the ſhore. The fleſh is every where in great eſteem, and it is certainly very nouriſhing; but it is ſo ſtrong, that ſome would have Sturgeon, with regard to fiſh, the ſame as a hog among quadrupedes. It is not very proper for tender conſtitutions, becauſe it is not eaſy of digeſtion; but it ſuits thoſe that are ſtrong and robuſt. The male is better than the female, except ſhe is full of ſpawn, and then ſhe is generally preferred on that account, as well as for the goodneſs of the fleſh at that time. The fat always lies heavy on the ſtomach, and it looſens the belly, becauſe it relaxes the fibres of the inteſtines. There is a tender thick griſtle that runs from the head to the tail, which ſome look upon as good eating after it is dried in the ſun.

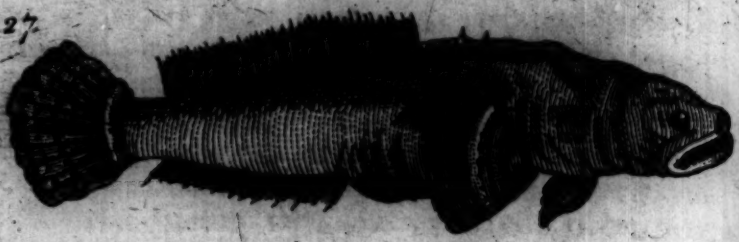
The parts of this fiſh uſed in medicine, are the bones, and the caviar, which is made of the ſpawn; that brought from *Hamburg* is not much unlike green ſoap, with regard to the colour and ſubſtance. There are likewiſe large quantities brought from *Ruſſia*, *Muſcovy*, and other places. The *Italians* ſettled in *Ruſſia*, carry on a great trade with it throughout that empire. They conſume a great deal of caviar in *Italy*; and it begins to be in requeſt in *France*.

The ADELLA and ADONA, ſo called by the *Italians*, is thought to be a fiſh peculiar to the river *Po* in *Italy*. It ſometimes grows, as we are told, to the weight of one thouſand pounds, and is taken with a large hook faſtened to the end of a chain; and they are obliged to draw it out of the water with a yoke of oxen.



American Toad-Fish.

27.



Sea-Snail.

71

Isinglass-Fish.

101

Sea-Horse.

40

It differs from a Sturgeon, in being a river fiſh, and in its bulk. When it arrives at a certain ſize, it loſes its barbs, which before were like thoſe of a Sturgeon. The fleſh of the Sturgeon is firm and of a pleaſant taſte; but that of this fiſh is ſoft, and not ſo agreeable. The mouth is like that of a Sturgeon, but much larger, and divided a little obliquely; beſides, it is not ſo pointed as in a Sturgeon; add to this, that the colour of the back is whitiſh, and looks woolly.

The ISING-GLASS FISH is of the Whale kind, and is griſtly, without bones, ſpines, or ſcales. The head is thick and broad, with a large mouth, and from the upper jaw there hangs four fleſhy wattles. The eyes are ſmall for the ſize of the fiſh; and the fleſh is very ſweet, but clammy. The ſhape is oblong and roundiſh: it has no ſnout, and is covered with a yellow, hard, ſlippery, ſmooth ſkin. There are two ſmall holes before the corner of the eyes, and the two fins on the back are placed erect near the tail. The gills have a thorny cover, in the ſame manner as a Sturgeon; but the tail is more forked, and there is alſo a little above the thorny covering of the gills, and on the ſides of them a ſort of a hole.

The HUSO, ſo called by the *Germans*, has a very long ſnout, and under it there are from four to eight barbs. There is only one fin on the back, not far from the tail; but on the belly there are two. The ſhape is not much unlike that of a Pike, and the belly is yellow, like that of a Carp; but the back is blackiſh. The body is without ſcales, and has no bones, but griſtles. The fleſh is ſweet, and very agreeable to the palate, being white when raw, but red when boiled. It ſometimes weighs four hundred pounds.

It is uſually met with in the ſeas about *Muſcovy*, and in the river *Danube*. They make that ſort of iſing-glaſs of the guts, ſtomach, tail, fins, and ſkin of this and the former fiſh, which is uſed by wine-merchants to fine or force their wine.

CHAP. XX.

Of Leather-mouthed River Fiſh.

THE mouths of theſe ſort of fiſh are without teeth; but they have ſome in the throat, or in the bottom of the mouth, near the ſtomach.

The CARP ſometimes grows to the length of a yard and a half, being of a proportionable thickneſs; but they are not ſo large in *England*, though there was one caught in the river *Thames*, near *Hampton-Court*, that weighed near thirteen pounds. The colour of this fiſh, eſpecially when full grown, is yellowiſh, and the ſcales are large: the head is ſhort, like that of a Tench, and the mouth is of a middle ſize, with flat, fleſhy, yellow lips. It has no teeth in the mouth, but there is a triangular bone in the palate, and two other bones in the throat, which ſerve for the ſame purpoſe. On the upper lip, near the corner of the mouth, there are two yellow barbs, which ſome call muſtachoes, from the ſituation. The fins are large, the tail broad, a little forked at the end, and of a reddiſh-black colour: the lateral line is ſtraight, and paſſes through the middle of each ſide. It has no tongue; but inſtead thereof there is a fleſhy palate, which, taken out of the mouth, looks like a tongue.

There were no Carps in the ponds or rivers of *England* till they were brought over by *Leonard Maſcal*, about one hundred and ninety years ago, as he himſelf informs us in his *Treatiſe of Fiſhing*. The fleſh of the river Carp is better than that of ponds; and ſome are highly pleaſed with it, while others diſlike it for its being ſoft and inſipid.

The Carp is perhaps a fiſh, that has the largeſt ſcales in proportion to its bulk. Some of theſe are brown, and others yellow and white; the brown colour prevails in the largeſt ſcales; the middle are of a yellow and gold colour, but the white are ſmall and ſilvered.

All the ſcales are connected together by the membrane that covers them, but this does not hinder them from playing a little; for, otherwiſe, the Carp could not bend to either ſide, as it always does in its motions.

If

If the outſide of this fiſh is carefully obſerved, a brown line may be ſeen on each ſide, that reaches from the head to the tail: this appears to be brown, becauſe the membrane that connects the lower part of the ſcales is very brown in the middle *.

The BREAM is a broad flattiſh fiſh, with a ſmall ſquariſh head, and a ſharp ſnout: the top of the head is pretty broad and flat, and the back, which riſes like

* Whoever fiſhes for Carp, eſpecially thoſe in rivers, muſt have a tolerable good ſhare of patience, which is a virtue every angler ſhould poſſeſs. Many very good ſportſmen have angled four or ſix hours, for three or four days together, for a river Carp, without having had a bite; nor is it leſs difficult to catch a Carp in ſome ponds, eſpecially where they have plenty of food, and the water is of a clayiſh colour. Thoſe who angle for him muſt be very early; for in hot weather he never bites in the midſt of the day, and very ſeldom in cold ſeaſons of the year. He may be taken either with worms or paſte. If you uſe the former, the blue marſh or meadow worm is eſteemed the beſt, though he has been taken with other worms, when not too big, as well as the gentle. As for paſtes, they are innumerable; but, doubtleſs, ſweet paſtes are beſt, ſuch as are made with honey or ſugar: and it would not be improper to bait the ground with your paſte ſome hours before you angle for this crafty fiſh. In order to draw the Carp together in ponds, or particular parts of rivers, where you intend to try your ſkill, it will be conducive to your ſport, to throw in, ſome days before, either grains or blood mixed with cow-dung or bran, or any garbage, as chickens guts, or the like, and then ſome of your ſmall pellets, with which you propoſe to angle. If you throw in a few of theſe ſmall pellets, while you are angling, it may help your ſport.

That very ingenious angler, Mr. *Hawkins*, of *Twickenham*, gives the following directions for making your paſte. Take the fleſh of a rabbit, or cat, cut ſmall, and bean flour; but, if that cannot eaſily be got, common flour may be uſed. Mix theſe together, and add to them either ſugar or honey, of which the laſt is perhaps the beſt. Beat theſe together in a mortar, or work them in clean hands, and then make it into one or more balls for your uſe; but you muſt work or pound it ſo long, as to make it tough enough to hang upon your hook without waſhing from it, taking care, however, that it is not too hard. You may, in order to ſtiffen your paſte, knead with it a very ſmall quantity of white or yellowiſh wool. If you would have this paſte keep all the year for any other fiſh, then mix with it virgin-wax and clarified honey: work them together with your hands before the fire, and make them into balls.

If you fiſh for a Carp with gentles, then put upon your hook a piece of ſcarlet, about half an inch ſquare, dipping it firſt in oil

like that of a hog, is of a blackiſh-blue colour; but the belly and ſides are white: the ſcales are large, and the mouth, for the ſize of the fiſh, very ſmall: the mouth is without teeth; but there is a triangular bone in the palate, which is ſoft and fleſhy, like that of a Carp: the iris of the eye is of a ſilver colour, and the pupil is ſmall *.

The

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of *Peter*, called by ſome Oil of the Rock. If you put your gentles, two or three days before, into a box or horn anointed with honey, and then place them on your hook alive, you will be as likely to kill this craſty fiſh this way as any other. While you are fiſhing in this manner, chew a little white or brown bread in your mouth, and throw it into the place where your float ſwims. There are many other baits uſed, ſuch as graſs-hoppers, green peaſe, &c. but Mr. *Hawkins* aſſures us, that, with diligence and patience, he has found the above ſucceed beſt.

The haunts of river Carp, in the winter months, are the broadeſt and moſt quiet parts of the river; but in ſummer they live in deep holes, nooks, and reaches, near ſome ſcour, under roots of trees, hollow banks, and, till they are near rotting, among or near great beds of weeds, flags, &c. Pond Carp cannot, with propriety, be ſaid to have any haunts; but it is to be obſerved, that they love a fat, rich ſoil, and never thrive in a cold, hungry water. They breed three or four times a year; but their firſt ſpawning time is the beginning of *May*, and in that month and *Auguſt* they are out of ſeaſon: in *March* and *April* they are in high eſteem. You muſt fiſh with ſtrong tackle, very near the bottom, and with a fine graſs or gut next the hook, and uſe a gooſe-quill float. Never attempt to angle for a Carp in a boat; for they will not come near it. There are many Carp in the *Thames*, weſtward of *London*; and it is ſaid, that about *February* they retire into the creeks of that river, in ſome of which many have been taken, with an angle, above two feet long.

* The Bream breeds both in rivers and ponds, but they delight chiefly in the latter; for which reaſon they are never found in ſwift rapid ſtreams, but only in ſuch parts of the river, which moſt reſemble ſtanding water, and have muddy bottoms. They love to keep company with each other, one hundred of them being ſometimes ſeen in a ſhoal. In ſome places they have been found to grow to the length of three feet, and here in *England* they have weighed ten or twelve pounds; but this is not very common. The fleſh, though in no great eſteem, may be rendered agreeable enough with good cookery. His baits are a dock-worm, found at the roots of that plant or ruſhes; green flies, and butterflies; the graſs-hopper in *June* and *July*, with his legs cut off, gentles, the young brood of waſps, paſtes of brown bread and honey, and ſheeps blood; but the beſt of all is a large red-worm. Barley, malt, or red-worms, are good ground-baits. They ſpawn

at

The RED EYE is akin to the Bream, and the ſhape of the body is much like one, only it is a little thicker. It is hog-backed; all the fins are of a reddiſh colour, and the whole body is tinctured with red, eſpecially the iris of the eyes. There is a ſaffron-coloured ſpot on the tongue, and the ſcales are larger than thoſe of a Roach. It may be diſtinguiſhed from a Roach by the redneſs of the eyes, by the ſaffron-coloured ſpot under the tongue, by the back fin having more rays, and the gut more folds. When full grown, theſe fiſh are about ten inches long.

The TENCH weighs with us about five or ſix pounds, when full grown; but in other countries they have been found to weigh twenty.

It has a ſmall head and ſnout, in proportion to the ſize of the body; for this is broad, thick, and ſhort: the opening of the mouth will admit one's little finger, and the jaws are without teeth; but in the throat there are five on each ſide: the covers of the gills conſiſt of four plates and three crooked ſpines; the lateral line is crooked, and nearer the belly than the back. There are ſmall ducts or holes on the head over the eyes; that is, one row on each ſide, that form a ſort of a line; and under the eyes there are two other lines or rows of holes, one of which is ſeated near the covers of the gills, and the other beneath the lower jaw: the eyes are ſmall, ſeated on the ſides of the head, and the iris is red: the openings of the covers of the gills are not ſo large as in other fiſh of this kind; there are four gills on each ſide, each of which is furniſhed with a double row of knots made in the ſhape of a comb, and which are equal on each ſide to the three inner gills; but in the laſt of the inner knots they are almoſt equal to each other, and the external are longer than the internal on the upper part, though much

at *Midſummer*, and may be fiſhed for from the end of *July* to the end of *Auguſt*, or from *April* to *Midſummer*. He bites from four to eight in the morning, and at the ſame hours in the evening; in windy, dull weather, all day.. Though they are ſcarce about *London*, yet they are found in plenty in the rivers of *Surry*. When you angle for him, you muſt keep ſtill and out of ſight, and uſe ſtrong tackle: you muſt fiſh near the bottom, give him time to bite, and ſtrike gently.

ſhorter at the lower: theſe are all ſoft. The back, which is thick, riſes a little above the head, and the belly is broad and flat throughout: the ſcales are oblong, and ſmall, in compariſon of other fiſh of the ſame kind; they adhere cloſe to the ſkin, and are black upon the back, and blackiſh on the ſides, with a little mixture of a golden or greeniſh-yellow colour; but it is whitiſh under the belly. There is a ſort of ſlime all over this fiſh, that renders it as ſlippery as an Eel. All the fins, as well as the tail, are black or blackiſh, and ſometimes of a dark-grey colour: the fins on the breaſt are blackiſh, almoſt round, and conſiſt of ſeventeen rays, of which the ſixteenth is longeſt, and the firſt is ſingle and ſtrong; but all the reſt are branched at the end, and the laſt is ſmall. The belly fins are alſo black and roundiſh at the edge, and conſiſt of eleven rays, of which the firſt is ſmall, the ſecond robuſt and thick; but all the reſt are branched at the ends. There is a ſingle black fin on the back, conſiſting of twelve rays, of which the firſt is very ſhort, and the ſecond is ſomewhat longer, and reaches to the middle of the reſt: the third is ſingle, as well as the two firſt; but the reſt are branched at the ends: the fin at the vent is black, and conſiſts of eleven rays, of which the two firſt are ſmall, but the third is pretty long and ſingle, like the two former, and all the reſt are branched at the ends. The tail is blackiſh, ſomewhat ſquare, and conſiſts of nineteen rays that are hard to count, except the laſt.

The fleſh of this fiſh is a little clammy, like that of an Eel, and may probably want a little ſpice in the dreſſing; but in general it is as much in eſteem as moſt other fiſh.

In the head of the Tench there are two ſmall ſtones, that have an abſorbent, detergent, and diuretic quality. Some apply Tenches to the feet in fevers, to cauſe a revulſion from the brain *.

The

* The haunts of the Tench are nearly the ſame with thoſe of a Carp: they delight more in ponds than in rivers, and lie under weeds, near ſluices, and at pond heads. They ſpawn about the

The RUDD, or FINSCALE, is broader than a Roach, or even than a Carp, and thicker than a Bream. The colour is of a duſky yellow, and the ſcales are of the ſame ſize as thoſe of a Carp. The eyes are reddiſh; but the belly fins, and thoſe next the vent, are of a more deep red. The covers of the gills are generally marked with blood-coloured ſpots, and the holes of the noſtrils are double on each ſide: the teeth and palate are like thoſe of a Carp, and the back fin is placed in the middle of the length of the back, having ten rays, of which the third is longeſt, and the firſt ſhorter by one half than the ſecond; but it is not hooked as in the Carp, from which it may be diſtinguiſhed by this mark only. The fin at the gills, on both ſides, has nineteen rays, of which the firſt is larger than in other fiſh of this kind, and there are two on the belly; but that pair over-againſt the back fin has nine on each ſide. The gill-fins are whiter than the reſt, and that on the back is darker: the pointed lines on the ſides are but in two places; and this fiſh is generally from twelve to ſixteen inches long. The fleſh is in great eſteem, and is always in ſeaſon, except in the time of ſpawning, which is in *April*, and then it is not very good *.

The

the beginning of *July*, and are beſt in ſeaſon from the beginning of *September* to the end of *May*: they will bite all the hot months, but are beſt taken in *April* and *May*. His hours are, like the Carp, early and late, in a ſmooth water; but the beſt time to angle for him is in a cloudy, drizling or rainy morning, with a ſouth or weſt wind. His baits are marſh, lob, or red worms, anointed with tar, or oils, ſuch as will be mentioned in their proper place. He likewiſe takes waſps, gentles, cadis, paſte made of brown bread, with a little tar; and blood and grains mixed are a good ground-bait. He muſt be fiſhed for ſtrong and near the bottom, or with worms near the middle, and muſt not be hurried in biting. In hot weather he may be ſnared, like the Pike, on the top of the water, with a double-haired link, not over-twiſted, hung in a nooſe, and tied to a line on a long rod. Let it fall ſoftly before him on the water, without touching him, till you have brought it over his gills; then pull gently, and you will have him. This fiſh is found moſtly in the *Stower* in *Dorſetſhire*, and is likewiſe in many of the ponds about *London*, particularly thoſe of *Epping Foreſt*.

* This fiſh is common in the river *Rhine* in *Germany*, and is found in the lakes of *Holderneſſe* in *Yorkſhire*; as alſo in the lakes

The NOSE FISH, or BROAD SNOUT, is a foot in length, and of the colour and ſhape of a Dace. The belly and ſides are of a ſilver colour; but the fins on the lower part of the body, and the part below near the tail, are ſometimes a little reddiſh. There is a blackiſh ſpot on the hinder part of the head, which is ſmall; and the belly is flat and broad, with ample ſcales. The lateral lines are nearer to the belly than the back, and the ſnout, which is flat and blunt, is a little more prominent than the mouth, by which it may be diſtinguiſhed from all other fiſh of this kind; from whence it has the name of Noſe-Fiſh. The mouth is ſmall without teeth, and the ſkull is tranſparent. The back fins, with regard to their ſituation and rays, are like thoſe of a Bream.

The CHUB, or CHEVIN, has a longer body than a Carp, and a large blackiſh head. The back is of a dark green, and the belly and ſides of a ſilver colour; however thoſe that are fat and full grown have them of a gold colour, ſprinkled with ſmall black ſpecks. The temples are yellowiſh, and the ſcales, as in a Carp, large and angular. The mouth, which is not large, is without teeth, and the upper jaw is a little longer than the lower. The palate is ſoft and furniſhed with a triangular bone; and the noſtrils are large, open, and have each a double hole, one of which is every now and then covered with a fold. The eyes are of a middle ſize with an iris, which is a mixture of gold and ſilver colours. The tail is forked, and all the fins are of a blackiſh blue, though in ſome there is a tincture of red. The belly is broadiſh, and the lateral lines run parallel to the bottom of the belly *.

The

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not far from *Lincoln*, beſides the river *Charwell* in *Oxfordſhire*. They ſwim in ſhoals, caſting their ſpawn among the weeds that grow in the water; and the largeſt weigh about two pounds. They may be fiſhed for at top-water with a fly, or a red-worm a little under. It is ſtrong, ſtruggles hard, and requires ſtout tackle, and time in landing.

* The Chub ſpawns in *March* or *May*, and is good till *Candlemas*, but much the beſt in winter. This fiſh, though a ſharp biter, is very timorous. He will bite from ſun-riſe to nine in the morning

The BARBEL is about a cubit in length, and the back is of an olive colour, but a little paliſh, and the belly is that of ſilver. The back and ſides are ſprinkled with black ſpots, and the ſhape of the body is long and roundiſh, but the back is ſharp, and arched. The ſcales are of a middle ſize, and the lateral lines run through the middle of the ſides. The belly is ſo flat, that, when this fiſh lies with its mouth downward, it touches the earth; which circumſtance is perhaps common to all fiſh that keep at the bottom of the water. The ſnout is a little ſharp, and the mouth is not large, being without teeth, like the reſt of this kind. The upper jaw is longer than the lower, and there are four barbs, of which two are at the corners of the mouth, and the other two are higher near the end of the ſnout. The tail is forked, the eyes ſmall, looking downwards, and their iris is either of a ſilver or gold colour, ſpotted with brown. In the ſummer time their bellies are red.

The weight of this fiſh is commonly about ſeven or eight pounds, and yet there was one caught at *Stains* that weighed twenty-three pounds. The fleſh is ſoft and flabby, and in no great eſteem; and the ſpawn is

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morning in ſummer, and from three in the afternoon to ſun-ſet, eſpecially if there is a gentle wind. His baits are, in *March* or *April*, worms; in hot months, cherries, ſoft berries, or flies, particularly the owl-fly, which is found in gardens, with a large head, light wings, and a yellowiſh body. A bit of ſoft cheeſe, gentles, beetles without the legs and wings, and ſnails, (the black one ſlit, to ſhew the white of his belly) are proper baits. A graſs-hopper on the top of a ſtream, and the humble bee at the bottom, a Roach in ſmall bits, or very little Eels, generally prove remarkably ſucceſsful. In *Auguſt*, and the cool months, you may uſe yellow paſte, made of the ſtrongeſt cheeſe pounded, mixed with a little ſalt butter, and died of a lemon colour with ſaffron: boiled malt or wheat will ſometimes anſwer very well. He will alſo take paſte made of cheeſe and turpentine, the earth-grub, ox brains, or fat bacon. He loves a large bait of two or three kinds on the hook together. He delights in large rivers under ſhady trees, on ſandy or clayey bottoms, and where cattle come to dung, in fords, in hot weather. They ſwim in droves together, and are in almoſt every river. Strong tackle muſt be uſed, and the angler muſt keep out of ſight. He muſt be played with when ſtruck, and landed in a net. In the warmeſt weather, he ſhould be fiſhed for at mid-water, and at top; in cold weather, lower; and, when it is very cold, at the ground.

is unwholeſome, purging both upwards and downwards *.

The DACE, or DARE, is like a Chub, though it is leſs, and a little whiter; the head alſo is leſs and not ſo flat; and the tail is more forked. Beſides, the body is more ſlender and compreſſed, and the ſcales are leſs. The colour is generally white, and there are a ſort of ſtrait ſtreaks between the ſcales. The iris of the eyes is not ſo yellow; nor are the tail, and back fins ſo black, though they are ſometimes ſprinkled with black ſpots. The teeth are not placed in the jaws, but in the throat, as in other fiſh of this kind. The *French* give it

* Barbel flock together like ſheep, and are at the worſt in *April*, about which time they ſpawn; but are ſoon after in ſeaſon. He is able to live in the ſtrongeſt current of water, and in ſummer he loves the ſhalloweſt and ſharpeſt ſtreams; he delights to lurk under weeds, and to feed on gravel againſt a riſing ground: he will root and dig in the ſands with his noſe, like a hog, and there neſt himſelf; though ſometimes he retires to deep and ſwift bridges or flood-gates, where he will neſt himſelf among piles, or in hollow places, and take ſuch hold of moſs or weeds, that, be the water ever ſo ſwift, it will not be able to force him from the place for which he contends. This is his conſtant cuſtom in ſummer, when he and moſt living creatures ſport themſelves in the ſun; but, at the approach of winter, he forſakes the ſwift ſtreams and ſhallow waters, and by degrees returns to thoſe parts of the river, which are quiet and deeper. Probably about this time, as well as in *April*, and in theſe places, they ſpawn, with the help of the milter: they hide their eggs in holes, which they both dig in the gravel, and then they mutually labour to cover them with the ſand, to prevent their being devoured by other fiſh. The Barbel is curious in his baits, which muſt be clean and ſweet, the worms well ſcoured, and not kept in ſour and muſty moſs. At a well-ſcoured lob-worm he will bite as boldly as at any bait, eſpecially if a night or two before you fiſh for him you bait the place, where you intend to angle, with big worms cut into pieces; and you need not fear either over-baiting the place, or fiſhing too early or late for the Barbel. He will alſo bite at gentles, which being green, and not too much ſcoured, are deemed an excellent bait. Cheeſe is likewiſe much in his eſteem, if it is not too hard, but kept a day or two in a linen cloth to make it tough. If the cheeſe is laid in clarified honey an hour or two before you uſe it, it will reward your trouble. Some adviſe, to fiſh for the Barbel with ſheep's tallow and cheeſe beat into a paſte, which is an excellent bait in *Auguſt*. Obſerve that your rod and line be long, and of proper ſtrength; for you will find him a heavy and dogged fiſh to deal with.

it the name of *Dard*, which ſignifies a dart, from whence the *Engliſh* Dare is derived. It is a very briſk and lively fiſh, and ſeems to dart along the water, it ſwims ſo ſwiftly. The fleſh of this fiſh is ſweet, ſoft, and yields good nouriſhment; but is in no great eſteem *.

The ROACH is leſs than a Bream, and about one third as broad as long. The back is of a duſky colour, and ſometimes blueiſh; but the belly is pale. The iris of the eyes, as well as tail and fins, are red. The lateral lines run parallel to the belly, and the tail is forked.

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* Dace are found in almoſt every river of the kingdom, and are very large in thoſe near *London*. They are found on gravelly bottoms, in the deepeſt and moſt ſhady places, as well as on the ſhalloweſt gravelly ſcour in hot weather. They alſo haunt the eddies between two mill ſtreams, under the water-dock, and generally near the top of the water. Their baits are ſmall red-worms: in *April*, cadews, and every ſort of worms from plants and trees, more eſpecially the oak-worm. In winter, paſtes, earth-grubs, and gentles; and in ſummer, ant and houſe flies. The ground-bait ſhould be a mixture of bread and bran. Their ſpawning time is in *February* and *March*; but they are good again in *April* or *May*, and beſt in *September*. In ſummer they bite all day, in morning and evening beſt, and pretty late in the latter. The float muſt be very ſmall for the deeps, having only one ſhot to poiſe it, and the hook and line very fine. The angler muſt not expoſe himſelf too much, it being a very ſhy fiſh; and he muſt ſtrike nimbly, as ſoon as he bites. Between two mill ſtreams uſe a cork float, and fiſh in the eddy, within a foot of the bottom. You muſt be provided with a cane rod of ſeventeen feet long, and the line a little longer, with three or four hooks, with ſingle-hair links, not above four inches long. Though Dace are frequently caught with a float, yet they are not properly float fiſh; for they are to be taken with an artificial gnat or ant-fly, or, indeed, with almoſt any other ſmall fly in ſeaſon. In the *Thames*, above *Richmond*, the largeſt are caught with a natural green or dun graſs-hopper, and ſometimes with gentles; with both which you are to fiſh as with an artificial fly. They are not to be come at till about *September*, when the weeds begin to rot; but when you have found where they lie, which in a warm day is generally on the ſhallows, it is incredible what havock you may make. Pinch off the firſt joint of the graſs-hopper's legs, put the point of the hook in at the head, and bring it out at the tail. But this ſport can be purſued only in a boat, and is to be recommended to none, but ſuch as live near the banks of that delightful river, between *Windſor* and *Iſleſworth*, who have or can command a boat for the purpoſe, and can take the advantage of a ſtill, warm, gloomy day.

forked. About the gills it is of a gold colour, and the mouth is round but void of teeth, it being a leather-mouthed fiſh. It will breed in ponds as well as rivers; and though the pond Roach is largeſt, that of the rivers is the beſt *.

The BLEAK, or BLEY, is a very ſmall fiſh, being ſeldom above ſix inches long. The body is broadiſh, the head little, the ſcales thin, and of a ſilver colour, eaſily coming off. The back is of a blueiſh brown or greeniſh, and the eyes are large, marked on the lower ſide with a blood coloured ſpot. The ſkull is tranſparent, and the inſide of the mouth is like that of a Carp. The fleſh is ſweet, nouriſhing and pleaſant, and it would be in high eſteem if the fiſh was larger.

The ſcales of the common Bleak are uſed to imitate pearls in the following manner. They take off the ſcales, put them into a baſon with a little water, and then rub them againſt the bottom in the manner of grinding colours. This done they pour off the ſilver-coloured water into a glaſs, leaving the ſcales at the bottom; and then repeat the operation till nothing comes off; putting the water into other glaſſes. Then they let it ſettle for ten or twelve hours, when the ſilvery matter will ſink to the bottom; and pouring off the water by inclination, that which is left behind is of a conſiſtence of oil, and of the colour of pearls. Then they

* The Roach is principally found in ſhallow, gentle ſtreams, which run over ſand or gravel, with here and there deep holes at the end of ſcours, where they uſually lie, and more eſpecially againſt the mouth of a ſmall brook or river, entering into a larger. They ſpawn in the middle of *May*, and may be fiſhed for ſix weeks after: they bite all day. They are very plentiful in the *Thames*, but are largeſt in ponds. The baits for this fiſh are the ſame as thoſe for the Dace and Chub, except that the flies muſt be uſed under water. At a *May* or ant-fly he will riſe in the hot months, if they are ſunk with a little lead to the bottom, near the piles, or poſts of bridges, or thoſe of a weir. You muſt pull up your fly very leiſurely, and the Roach will follow it to the very top of the water, gaze on it, run at it, and take it, leſt it ſhould eſcape. Gentles or paſte are proper in winter; worms or cadews, in *April*; in the hot months, a ſhrimp, the little white ſnails or flies, and a red-worm in windy weather. The ground-bait muſt be the ſame as for the Dace.

they mix it with iſing-glaſs or fiſh-glew, and with this they varniſh any ſort of ſubſtance of the ſize of beads, particularly wax, alabaſter, and glaſs; after which they will have the exact appearance of pearls. But as theſe are not proof againſt moiſture, they have a method of lining the inſide of glaſs beads therewith, blowing a little of the liquor into the inſide with a ſmall pipe. Then they ſhake it about till it fixes itſelf all over the internal ſurface. It has a ſmall blueiſh caſt, which cauſes theſe beads the more to reſemble pearls. After they have done this, they throw them into a baſket, and ſhake them together ſo long, that they become quite dry; and then, to render them more ſolid, they fill them with wax. This is the method of making the true *French* necklaces, and there are great numbers employed in *Paris* for this purpoſe *.

The GUDGEON is five or ſix inches long, with a round body, ſmall ſcales, a brown back, and a whitiſh belly. It is ſprinkled with about nine or ten pretty large blackiſh ſpots, which are placed in a right line, directly running from the head to the tail on each ſide. There are alſo others that are ſmall on the back, tail, and fins, and at each corner of the mouth there is a barb or thread. They are to be met with in rivers almoſt every where; but grow to a larger ſize in ſome than others, for in that near *Uxbridge* there were four taken that weighed a pound. The fleſh is in high eſteem, and ſome think it not much inferior to a Smelt †.

The

* Bleak ſpawn in *March*, and are moſt in ſeaſon in the autumn. It is an eager fiſh, and is found in almoſt every river in great plenty, and in all parts of them, having no particular haunts. You may fiſh for him under water in winter, with gentles, or ſmall red-worms; and in ſummer, at the top or middle, houſe or ant-flies are good baits for him, as well as are all thoſe for the Roach, only they muſt be leſs. He bites all day in *Auguſt*. A little bread chewed, and looſely thrown in, is a good ground-bait. Fiſh with a paternoſter line, or whip with a fly.

† The Gudgeon ſpawns two or three times a year, and always in ſummer. They haunt the cleareſt ſandy or gravelly bottoms, and middling ſharp ſtreams, where they lie in ſhoals on the ſhallows in ſummer; but get deeper about autumn, under any bridge or

The LOACH, or GROUNDLING, is like a Gudgeon in ſhape and colour; but is much leſs and ſhorter, ſeldom weighing above four ounces. The body is ſoft and ſlippery, and the tail broad, but not forked; and there are few or no ſcales. The head, back, fins, and tail are ſprinkled with blackiſh ſpots, and ſometimes with a dirty yellow. On the upper jaw there are three pair of barbs, one at the corners of the mouth, and two near the end of the ſnout. The eyes are ſmall, and have their iris yellow. The fleſh is tender and delicate, and is by many ſwallowed alive, being thought good for a conſumption *.

The PINK, or MINNOW, is a great deal leſs than a Gudgeon, having a roundiſh body only three inches long, with ſcales that are hardly viſible, and there are no barbs. On each ſide there is a gold-coloured line, which runs from the head to the tail; and below that, it is mottled with ſcarlet in ſome, in others white, and in others again with a ſhining blue. Laſtly, in ſome there are three lines, two being of a gold colour, and that in the middle blue †.

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or plank in ſmall rivers, being fond of the ſhade. The artiſt muſt always fiſh at the bottom, and a cork float is beſt; but the running line is preferable to all. Rake the ground very often with a long pole, or throw the earth in by handfuls, or ground-bait with crumbs of bread chewed ſmall. Strike ſlowly, fiſh pretty fine, and let your hook and bait be ſmall. You need not ſtand under cover; but may, if you chuſe it, go up to the middle of your legs in water, and catch them at your feet, for they are not a ſhy fiſh. He bites all day, from *March* to *October*, the baits being gentles, paſtes, waſps, cadews, red-worms, or the blood-worm found in the mud of cow-ponds near *London*. They never riſe at flies, nor take them under water.

* Loach are generally found in ſmall, clear, ſwift brooks, and lie under ſtones, pieces of wood, and the like. They ſpawn in the beginning of *April* among the weeds; but are never out of ſeaſon. He bites at a ſmall red-worm, or the gilt-tail, and may be fiſhed for at any hour. The hook muſt be of the ſmalleſt ſize.

† The Minnow is found in all Trout rivers: not in deep ſtill places, where the Trout lies; but in ſhallow and ſwift ſtreams. His baits are any ſmall worms, paſte, cadis, or gentles, and muſt be angled for with a float. He ſpawns in *April*, and bites at bottom or mid-water all day, if it is clear; but never in dark, windy weather, or in the night, when the Trout is moſt ravenous

B M

Dung-Fish.
115.
Sea-Bat.
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Sea Eagle.
20
Caboo
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CHAP. XXI.

Of bony or ſpinous Fiſh, with one fin on the back, whoſe forward rays are ſtiff and thorny, and the hinder ſoft and flexible.

THE CUGUPU GUACU of the *Braſilians* is a very large fiſh, being ſometimes ſix feet in length. The head and mouth are large; which laſt is without teeth, and the eyes are of a middle ſize, with a yellow iris. The tail-fin is almoſt ſquare, and the ſcales are ſmall. The whole head, back and ſides, are of an aſh-colour mixed with umber; but towards the back it is a little deeper. The belly is whitiſh, and all the fins with the tail are of a light brown. The whole head, back and ſides, are ſprinkled very fine with ſmall black ſpecks; but the belly and the reſt of the fins have none.

The DUNG FISH is ſo called, becauſe it delights to be near privies, where it ſeeks for food, and where it is generally taken. It is a broad, flat fiſh, hardly a ſpan in length, and about the ſame breadth, with a blueiſh belly, and a body variegated with duſky ſpots. According to the figure, the forward rays of the back fin are ſpiny, and the backward ſoft.

The PARGIE differs from the *European* Sea Bream in little elſe beſides the ſhape of the forepart of the body, which is almoſt circular, and of a greyiſh colour, with

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nous for prey. He is conſidered as an excellent bait for either Trout, Pike, or Pearch. They are placed on the hook in this manner: Put the hook in at his mouth, and out at his gills; then draw it through two or three inches, and put it again into his mouth, and the point and beard out at his tail; then tie the hook and his tail about with white thread, which will make it the apter to turn quick in the water; then pull back the part of the line, which was ſlack when you put in your hook the ſecond time: pull that ſo far back, that it may faſten the head in ſuch a manner, that the body ſhall be ſtraight on the hook. Loach and Sticklebacks are put on the ſame way. Artificial ones of tin are now ſold common at the ſhops.

with ſtreaked yellow lines, that reach from the head to the tail.

The GILT HEAD or GILT POLL, is a broad fiſh compreſſed on the ſides not much unlike a Bream. It ſeldom grows to be above two ſpans in length, nor weighs more than eight pounds. The ſcales are of a middle ſize, and the back is blackiſh; at the upper corner of the cover of the gills there is generally a black ſpot, and below them is ſometimes another of a purple colour. Between the eyes there is an arched ſtripe, ſomewhat like a half moon of a gold colour, from whence it takes its name. The convex part turns towards the ſnout, and the horns towards the eyes. The teeth in each jaw are oblong and roundiſh, and the back is ſharp and furrowed; the tail is forked, and the fleſh is greatly eſteemed for its fine taſte and wholeſomeneſs. It is often ſeen in the fiſh markets of *Genoa*, *Venice*, and *Rome*; and is ſometimes taken near the coaſts of *England*.

The DENTALE, ſo named by the *Italians*, is not much unlike a Sea Bream, though it is thicker and longer, in proportion to the ſize. The head is depreſſed, the ſnout oblong, and the back ſharp, being of a dirty green, or yellowiſh colour, and ſometimes purpliſh, in thoſe that are large, ſprinkled with bright blue and black ſpots, as well as on the ſides. There is a row of teeth in each jaw, of which four are more conſpicuous than the reſt, and are like dog-teeth; from whence this fiſh has its name; for *dens* ſignifies a tooth. The eyes are large, with a golden iris. It is a common fiſh at *Venice* and *Rome*, and commonly weighs three or four pounds, though ſome have been ſeen that weigh ten.

The SEA BARBEL is of a ſilver colour, but whiteſt on the back, and the body is oblong, with ten tranſverſe blackiſh lines on each ſide. The tail is forked, the head longiſh, and the iris of the eyes is of a gold colour. The lips are thick, prominent, and rough, it having no teeth, except in the bottom of the mouth, where there are grinders. The barbs are joined by a thin membrane to the lower jaw, and the ſcales ſtick cloſely to the ſkin. The fleſh is well taſted.

The

B M

Old Wife.

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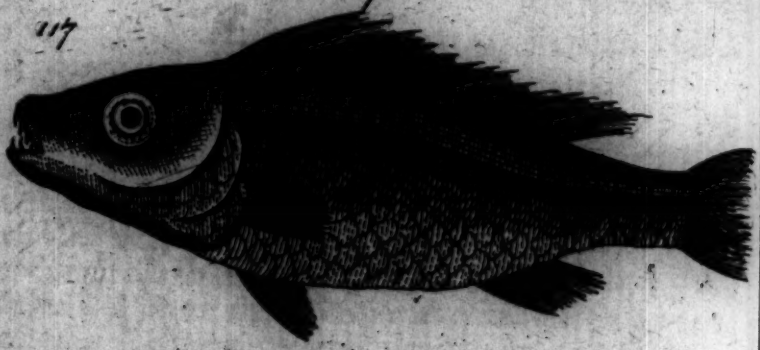

Soad.

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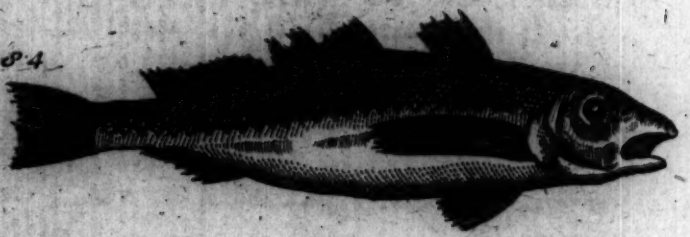
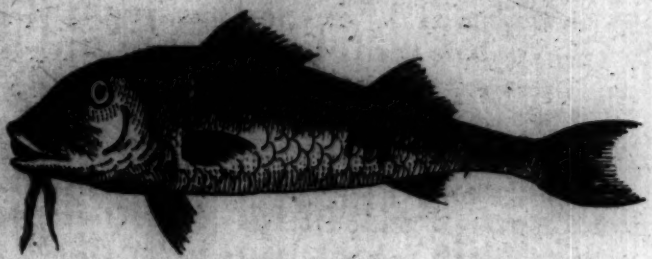


Mullet.

79



Umbra

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The MÆNAS is in ſhape like a Pearch, but broader and more compreſſed, and ſix inches in length. The colour is of a light green or yellowiſh, and there are darkiſh tranſverſe ſpaces, and blueiſh lines that run according to the length of the body, with a large black ſpot on each ſide. The tail is a little forked, and the eyes are leſs than thoſe of the Ox-eye, with a ſilver coloured iris. The mouth appears ſmall when ſhut, but when open it is very wide; for the upper lip expands itſelf like a tube, and is contracted again when the mouth is ſhut, the upper part having a ſort of prop, which is received into a kind of ſheath made in the upper jaw, which make is peculiar to this fiſh. It is caught in the *Mediterranean* ſea.

The BOGA, ſo called by the *Italians*, is about a ſpan in length, and of a ſlender roundiſh make. The ſcales are pretty large, and the back of a yellowiſh olive colour. The lateral lines are dark and broad, and beneath them, on each ſide, are four golden parallel lines, with a mixture of ſilver colour, that run from the head to the tail. The eyes are large, for which reaſon it is called by ſome BOOPS, that is OX-EYE, and they have a ſilver coloured iris. The mouth is of a middle ſize, and furniſhed with ſmall teeth. It is common in the ſea near the coaſt of *Italy*. There are ſome other ſpecies of this fiſh.

CHAP. XXII.

Of Fiſh of the Wraſſe, or Old-Wife kind.

THE COMMON WRASSE, OR OLD-WIFE, is nearly of the ſhape of a river Tench, and nine inches in length, but it has larger ſcales. The colour is mottled with red, yellowiſh, and brown lines placed alternately, and running from the head to the tail, being five or ſix in number. The ſnout is oblong and turns upwards; and the lips are thick, fleſhy, ſtanding out beyond the jaws; but the mouth is ſmall. The teeth in the jaws are ſerrated, but not very

very ſharp; and the fins are mottled with red, blue, and yellow. The tail when expanded is roundiſh. This fiſh is called in *Latin* TURDUS, with ſignifies a THRUSH, becauſe it reſembles one in its ſpots and colours; and indeed there is no ſort of fiſh we know of, which has ſo great a variety. It is to be met with in the *Britiſh* and *Iriſh* ſeas, and is more delightful to the eye, than pleaſant to the taſte.

The LESSER GREEN WRASSE is green over all the body, as well above as below; but ſome of them have blueiſh ſpots about the belly, and the body is more broad and thick than that of others of this kind. The fins are a little ſpotted, and it has a purple tubercle near the vent. The Black Wraſſe, is ſo called from its black or dun colour, inclining to blue. The Leprous Wraſſe of *Belonius*, does not differ from the former, except in the variety of its colours.

The PAINTED WRASSE is of a middle ſize, between the longer and broader fiſh of this kind, and weighs about three pounds. The variegated Wraſſe is like the former, and the greater Green Wraſſe has an oblong body, which is in ſhape not unlike a Pike. The lower part of the body is of a lighter colour, and ſprinkled with yellowiſh and aſh-coloured ſpots. The oblong brown ſpotted Wraſſe differs little from the former, except in the colours.

The ANTHIAS is of the colour of a Sea Bream, that is reddiſh. The fin that runs from the head to the tail is almoſt red, and the firſt prickle of it is tall and ſtrong. The belly fins are much longer and more ſlender than thoſe on the gills, and they are all, as well as the tail, of a reddiſh colour. The head is roundiſh, and the ſnout prominent.

The SACCHET, of the *Venetians*, is a ſmall fiſh of the ſhape of a Pearch, and like it in colour as well as in the tranſverſe rings. The fins are like thoſe of the Mænas, and the mouth is wide, the ſnout ſharp, and the lower jaw longer than the upper; but they both are furniſhed with very ſmall teeth. The iris of the eyes is of a ſilver colour, and the tail is forked, variegated with tranſverſe golden lines. The ſcales are ſmall, and the back-fin behind the ſpiny rays are marked with a black

black ſpot, which is the peculiar characteriſtick of this fiſh.

The CHARMA is a ſea fiſh, with a body in ſhape like that of a Sea-Wolf, as is alſo the cleft of the mouth. The lower jaw is longer than the upper, which makes the mouth ſeem to be always open. The teeth are ſharp, the eyes ſmall, and the back is of a blackiſh red. The lines that run from the head to the tail are reddiſh, and the tail is ſprinkled with red ſpots, as well as the fin behind the vent, that runs to the tail.

The SEA PEARCH is a foot in length, and of the ſhape of a River Pearch, nor is the colour much different; beſides, the back and ſides are marked with ſix or ſeven tranſverſe ſtripes. The whole head, and the fore part of the belly, are elegantly painted with blue and red ſtripes, and the back fins, as well as that behind the vent, are ſprinkled with ſpots, partly yellow, and partly of a ſaffron colour. The tail, belly, and gill-fins are variegated with yellow ſpecks, or red lines. But the colours in theſe fiſh differ with regard to age, ſex, and the places which they frequent. The ſnout is more ſharp than that of a river Pearch, and the mouth is exceeding large, in proportion to the bulk of the fiſh, being always open. The eyes are large, with a yellow, and ſometimes red iris, and the aperture of the gills is very wide. At the corner of the outward plate of the cover of the gills there are two great broad ſpines. The ſcales are of a middle ſize, the belly a little prominent, and the fleſh delicate. It is very common at *Venice* and *Marſeilles*.

The ACARA-AYA is three feet in length, and is of the ſhape of a Carp. The teeth are ſharp and ſmall; but there are two more long and thick on the upper jaw. The eyes are large, with a blood-red circle without, and ſilver-coloured within. There are ſaid to be two fins on the back, and the tail is broad, and almoſt divided into two horns. The ſcales are middle ſized, and of a ſilver colour, ſhaded with another of the colour of blood. The belly is entirely white; but all the fins are of a blood colour, except the belly-fins, which are white: their extremities are of the former colour.

The

The SEA SCORPION weighs about a pound, and has a thick body in proportion to its length. The head is very large and full of prickles; but the body is ſmall towards the tail, and the belly tumid. It is hog-backed, and the ſhape in general is like that of a Pearch. The colour is of a dirty yellow, ſpotted with black, and the ſcales are ſmall like thoſe of Serpents. The covers of the gill-fins are alſo full of prickles. The ſpace between the eyes is concave; and the eyes are large and prominent, placed near each other; and over each there is a ſmall fin. The mouth is very wide, and the jaws are rough, with ſmall teeth. The fin on the back is low in the middle, and the tail is roundiſh. There is another Sea Scorpion, which differs from this in being three or four times as big, in being red all over, and variegated with black ſpots.

The RUFF is of the ſhape of a Pearch; but is leſs, and wants the tranſverſe blackiſh ſtripes. The ſcales are of a middle ſize, and are a little fringed on the edges, which render this fiſh very rough, from whence it has its *Engliſh* name. The back is of a dirty yellowiſh green, and the lower part of the ſides of a paliſh yellow; about the covers of the gills, it is of a ſhining gold colour, whence it is called by ſome the *Gilded Pearch*. The back, and upper part of the ſides are ſprinkled with blackiſh ſpecks and ſpots. It is a river fiſh *.

The SCHRAITFER, ſo called at *Ratiſbon*, is very common at that place. It is taken out of the *Danube*, and agrees with a Ruff, in having ſpines on the edge of the upper plate of the covers of the gills, and in having only one fin on the back, with rays, partly ſpinous, and partly ſoft, and ſpotted membranes between them. It differs from it in being of a longer and rounder make, and a back that does not riſe ſo much; likewiſe the ſnout is longer, and in the prickles, which in that are only fourteen in the back fin, but in this are

* This fiſh uſually haunts deep waters that run quietly, and there are generally great numbers of them together in one favourite place. It is a greedy biter; and, if the angler has found where they lie, he may catch forty or fifty, and ſometimes as many more, at one ſtanding. His bait is a ſmall red-worm.

are eighteen. There are alſo two blackiſh lines running on the length of the ſides, of which the upper begins above the pointed line, and then croſſes it; beſides, the colour between the lines is whiter, and the tail more forked.

⁂ The GUNNEL, ſo called in *Cornwall*, and by ſome the BUTTER-FISH, is ſometimes about ſix inches long, but ſcarce an inch broad. The body is ſlender and compreſſed, and the colour is mottled with dark, red, green, and white, with tranſverſe ſtripes alternately placed. At the root of the back-fin, which runs from the head to the tail, all whoſe rays are ſpinous, it is beautifully ſpotted with round ſpots on both ſides, which are black, and ſurrounded with a whitiſh ring; theſe are ten or twelve in number, and placed at equal diſtances through the whole length of the back, from the head to the tail, which mark is peculiar to this fiſh. One ſtraight continued ſtripe runs from the head to the vent.

⁂ The FATHER-LASHER, ſo called by the boys of *Cornwall*, and by the *Dutch* POTSHEFT, is ſix or nine inches long, and of the ſhape of a Bull-head. The head is pretty large, and covered with prickles; but the body is ſmall, and the belly broad and flat. On the back, above the lateral lines, there are three or four roughiſh broad tranſverſe ſpaces of a blackiſh colour; but the intermediate ſpaces are more pale. The covers of the gills are connected below, and appear like a mantle thrown over his head and ſhoulders. There are two fins on the back, the more forward of which has eight or nine rays; which, when the fiſh is grown up, are a little ſtiff, as well as ſpinous. The circumference of the tail, when it is expanded, is ſomewhat roundiſh. The noſtrils are ſmall, the mouth large, and armed with ſeveral rows of ſharp teeth, and the tongue is broad, large, and ſmooth. The eyes are covered with a looſe tranſparent ſkin, and the pupils are ſmall, and encompaſſed with a red circle. It will live a long while out of the water, and it feeds upon ſhrimps, the young fry of fiſh, and ſea inſects.

The STICKLEBACK, or SHARPLING, is the leaſt of all fiſh we know. It has only one fin on the back, with three diſtinct prickles placed before it. On the belly there are two others that are larger, ſtronger, and joined to a very hard bone; for, in the room of belly fins, there are two bony triangular plates. It can raiſe the prickles up, or depreſs them towards the tail, as it pleaſes. The mouth is furniſhed with very ſmall teeth: the upper jaw is a little longer than the lower; and about the vent it is ſpotted with black *.

The SEA STICKLEBACK has a ſquare body about an inch thick, and nine inches long; towards the tail, it is alſo ſquare and very ſlender. The ſkin is ſmooth, and blackiſh on the back, but the belly is of a whitiſh yellow. The head is not unlike that of a Pike, only it is longer. It hath two gill-fins, and another of a triangular ſhape on the back, from which there runs a ſtraight row of fifteen prickles a little inclined, but diſtinct, and not connected together by a membrane. In the middle of the belly there are two prickles, and one at the vent. A triangular fin terminates the tail.

CHAP. XXIII.

Of American *Fiſh with a ſingle Fin on the Back, whoſe Rays are all ſpinous.*

THE ACARAPUCA, of the *Braſilians*, is a river fiſh half a yard in length, and four or five inches broad. The ſnout is ſharp at the end, and the mouth is without teeth. The eyes are large, with an iris mixed with white and brown. Every part ſhines with ſmall ſcales of a ſilver colour, only on the back there is a little mixture of gold. On each ſide there are ſix oblong blueiſh red ſpots, which are not very conſpicuous, and the

* This fiſh is found in every river, lake, brook, pond, and even in ditches. It is taken with a bit of red-worm; and, with his prickles cut off, is uſed as a bait for Pike, Trout, Eels, &c. For the manner of placing him on the hook, ſee the note at the bottom of page 115.

the back fins, as well as the tail, are of a light blue, and ſo are the ſide fins. There are two at the bottom of the belly, which, with thoſe near the vent, are a little yellowiſh.

The GUATACUPA JUBA, of the *Braſilians*, grows to the length of two feet, and has a back a little crooked. The ſnout is triangular, and ſharp at the end, and the teeth are exceeding ſmall, with large eyes, which have a red iris. The fins are as in the former, only they are white as well as the belly. The ſcales are pretty large, of a ſilver colour, and there are ſtripes of a ſilver colour with a reddiſh caſt, which run along the body from the head to the tail. The head is of a yellowiſh ſilver colour mixed with red.

The ACARA, of the *Braſilians*, is three inches in length, and has a body not unlike a Pearch. The mouth is narrow, and the jaws as rough as a file. The eyes are not large, but have a golden circle, and the fins are as in the former. The tail is oblong, and the ſcales are pretty large, of a ſilver colour; but on the head, back, and ſides, they are mixed with umber. In the middle of each there is a large black ſpot, as alſo near the root of the tail. This is a river fiſh, and keeps conſtantly in freſh water.

The ACRAPITAMBA, of the *Braſilians*, has an oblong body like a Barbel, and grows to the length of two feet and better. The mouth is ſmall, furniſhed with teeth, and the eyes are large, with a red iris. The tail is five inches long, and forked; and the ſcales are like thoſe of a Carp, but of a blue purple colour. The lateral lines are of a gold colour, and an inch and half broad, running from the eyes to the tail. Above theſe lines there are golden ſpecks, and under them fine yellow lines running according to the length of the fiſh. The back-fin and the tail, are as it were gilded, and thoſe on the belly and ſides are of a whitiſh yellow. Their fins ſhine greatly in the night.

The URIBACO, of the *Braſilians*, has a crooked back, a protuberant belly, and is fifteen or ſixteen inches long, and five or ſix broad. The teeth are ſmall and ſharp, the gills and the eyes large, with a ſilver coloured iris mixed with a little red. The fins are like

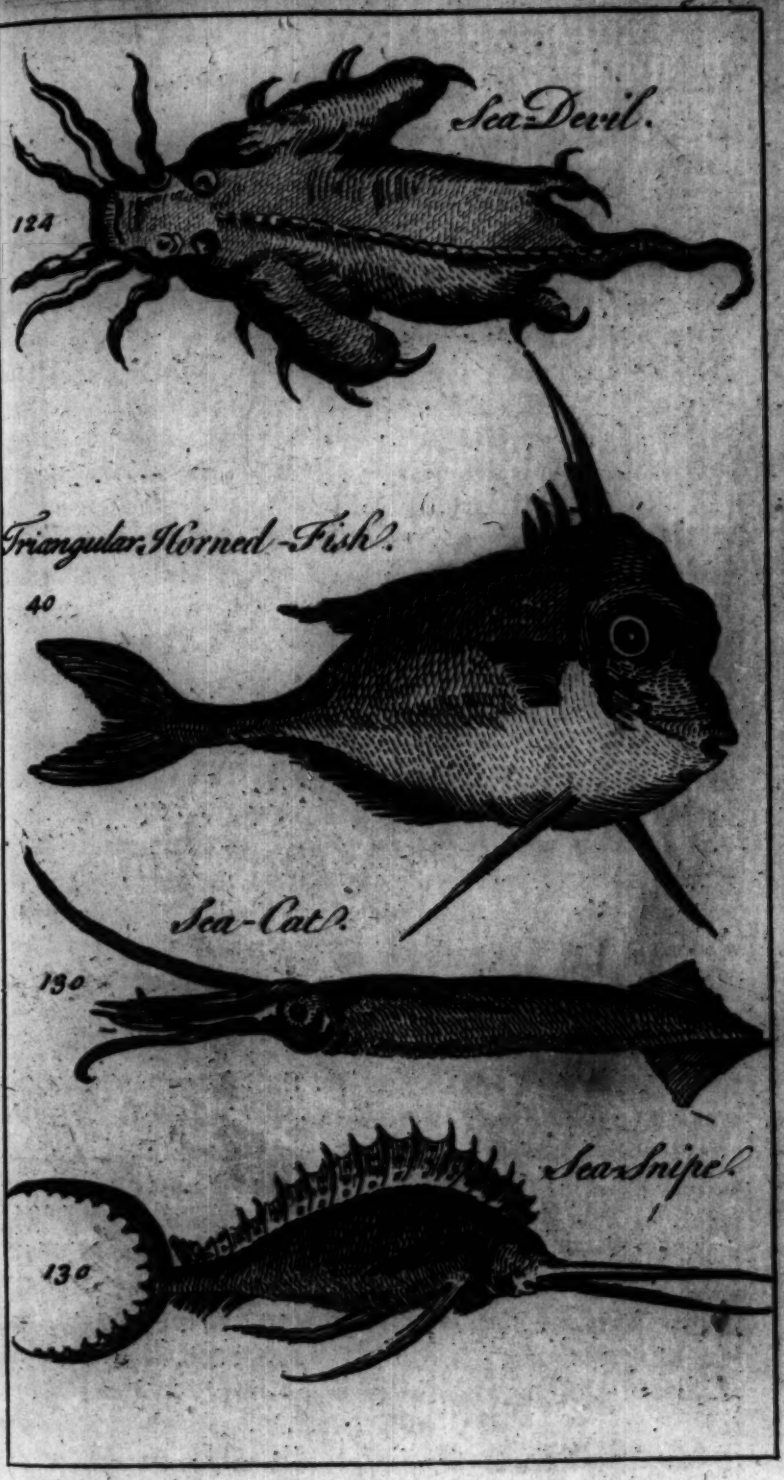
the reſt of this kind, only thoſe on the ſides and belly are whitiſh, or of a ſilver colour. The back-fin, and the tail, which is divided into two horns, have more of red than of a ſilver colour. The ſcales are large, and are all of a ſilver colour, with a little reddiſh caſt. The lateral lines are red, above which there is a large black ſpot on each ſide of the backward part of the body.

The SEA DEVIL is four feet long, and broad in proportion. It has a bunch on its back, covered with thorns or prickles, like thoſe of a hedge-hog; and the ſkin is hard, unequal, rough, and of a black colour, riſing into ſeveral ſmall bunches, between which there are two ſmall black eyes. The mouth is extremely wide, and armed with ſeveral very ſharp teeth, two of which are crooked, like thoſe of a wild boar. It has four fins and a broad tail forked at the end; but that which gave it the name of a Sea Devil, are two black ſharp horns over the eyes, which bend towards the back. It is a very frightful fiſh, and its fleſh is a deadly poiſon.

There is likewiſe another SEA-DEVIL on the gold coaſt of *Guinea*, which has four eyes, is twenty-five feet in length, and about eighteen broad. On each ſide there is an angular ſubſtance as hard as horn, and very ſharp; the tail is as long as a whip, and has alſo a dangerous point. The back is covered with ſmall lumps, two inches high, and ſharp at the ends; the head is large, but there is no appearance of any neck, and the mouth is furniſhed with flat cutting teeth. Two of the eyes are near the throat, which are round and large; and the other two are placed above them, but very ſmall. On each ſide the throat there are three horns of an equal length, the middlemoſt of which is three feet long, and an inch and a half in diameter; but they are flexible, and can do little harm. The fleſh is tough, and not fit to be eaten.

The PIRA ACANGATARA, that is the fiſh with a hard head, is of the ſize of a middling Pearch, being ſeven or eight inches long; it has a mouth of a moderate ſize, with eyes that have an iris of a dark gold colour mixed with red, and the tail is forked. The ſcales are of a ſilver colour, with a flame-coloured caſt, and on the belly they are of a ſilver colour, inclining to a

ſea


Sea-Devil.
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Triangular Horned-Fish?
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Sea-Cat?
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Sea Snipe?
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ſea green. The back-fin ſhines like ſilver, and is marked with brown ſpots. The ſide fins are white, thoſe on the belly blueiſh, and the tail-fin is blueiſh at the end.

The PIRA NEMA, of the *Braſilians*, is of the ſize of a middling Carp, being ten or eleven inches long, and three broad. The mouth is wide, roundiſh, and without teeth, but the jaws are rough. The eyes are large, with a white iris, only the upper part is red. The gills are very large, and the fins are placed as in the reſt of this kind, but the back-fin reaches from the hinder part of the head to the tail, and has twenty-two ſpines. The whole fiſh is of a ſilver colour, with a caſt of that of gum lack; but in the body it is lighter, being almoſt white.

The RED PUDIANO, or BODIANO, is of the ſize of a middling Pearch, and two inches in breadth. The head is ſmall, the ſnout ſharp, and the mouth armed with little ſharp teeth. The eyes are a little prominent, with a double circle, the outermoſt of which is white, and the inner yellow. The fins are the ſame with regard to the number, ſhape, and ſituation, as in the former; and the body is covered with fine ſcales, cloſely united. The colour of the whole body is yellow mixed with gold, only the top of the head, and the whole back, to the middle of the ſides, is of a fine purple mixed with black.

The GREEN PUDIANO has an oblong body, and from the extremity of the ſnout to the beginning of the tail, is ten inches long and three broad, with a ſharp ſnout; at the end of the upper jaw, there are two ſharp long teeth, and then a row of ſmall ones. In the under jaw, there are four of the ſame kind, and behind them a row of leſſer white teeth. The eyes are ſmall, with a circle about the pupil, which is of a gold colour within, and whitiſh on the outſide. The back fin is of a gold colour, with blue undulated ſtreaks according to the length, and the lateral fins are whitiſh, with a blue line about the circumference. The belly-fins are of the ſame colour, and that at the vent of a reddiſh brown, with blue ſtreaks. The tail is reddiſh, ſtreaked with a ſea green colour, and the ſcales are broad and yellow,

inclining to gold, with a moſt beautiful blue on the edges. The upper part of the head is of a gold colour, with a large ſea-green ſpot ſurrounded with azure, and variegated with blue, yellow, greeniſh, and whitiſh ſtreaks.

CHAP. XXIV.

Of Eaſt-India *Fiſh not fully deſcribed.*

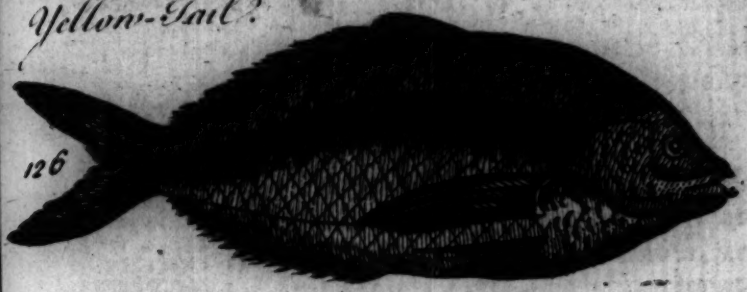
THE SEA HOG is about fifteen or ſixteen inches long, and ſeven broad. It has a very thick ſkin, and ſuch cloſe hard ſcales that ſcarce any inſtrument will pierce them; but when boiled, the ſcales come off with eaſe, and then the ſkin is very ſoft. The fleſh is white, reſembling the breaſt of a chicken, and the mouth ſmall in proportion to the ſize, but is armed with two rows of white ſhining teeth. On the back, which is brown, there is a ſharp fin, which this fiſh can erect at pleaſure, and ſuch another oppoſite to it on the belly. The belly is of a ſhining ſilver white, but the ſides are mixed with yellow, which gradually turns to an aſh colour on the back. It has large brown ſhining eyes, and when boiled, is very well taſted.

The STONE BREAM is four feet long, and in ſhape like our common Breams, with large eyes, a big red mouth, and the fins, and extremity of the tail, are of the ſame colour. They are taken at ſea with a hook, and the fleſh is excellent, dreſſed any way.

The BALD PATE is ſo called, from having no ſcales on the head and neck, though the reſt of the body is covered with them. It is of a greyiſh colour; the mouth, which is very wide, is ſpotted with red, and the eyes are large, yellow, and prominent. It is taken in the rivers as well as the ſea, and the fleſh is exceeding good.

The YELLOW TAIL is of the ſhape and ſize of a Bream, with very ſharp prominent teeth on the fore part of the mouth. The back is inclining to yellow, and

Yellow-Tail?



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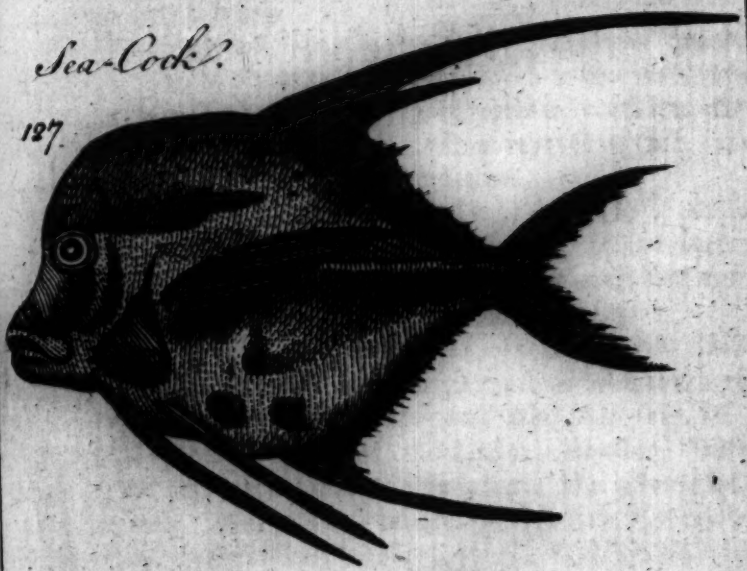
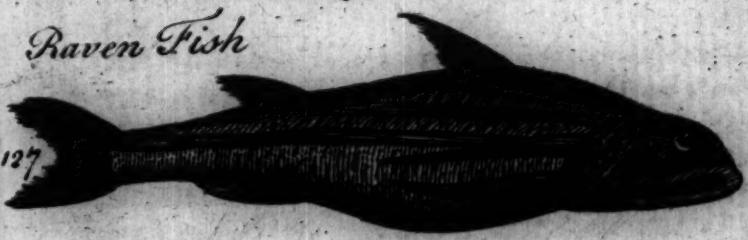
Sea-Cock?

127.



Raven Fish



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Indian Kaelt Fish.

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and the tail is of a bright yellow; but the belly is blue, inclining to brown towards the fore part. It has red fins; it is caught in the ſea near the rocks, and is in high eſteem.

The KAELT FISH is ſomewhat like a Pike, with a mouth full of ſharp teeth, and the eyes are large and bright. The belly and tail are of a purple colour, and the back brown. It is about a foot and a half in length. It ſwims very ſwiftly, and is well taſted, though the fleſh is a little hard.

The RAVEN FISH has a mouth like a bill under the head, and is about a ſpan long, with a red back and tail, but the belly is inclining to yellow, and has two yellow ſtreaks on each ſide. It is a very firm fiſh, and wholeſome. It is taken in ſalt waters.

The KING's FISH is ſo called, becauſe it is in the higheſt eſteem in the *Eaſt-Indies*. It is five feet in length, with a long forked tail, and the back and ſides are full of brown ſpots; but the belly is white.

The INDIAN SEA EEL, or WATER SERPENT, is about three feet long, and of a brown colour, variegated with black ſpots, like the ſkin of a Serpent: the fore part of the body is ſlender; but it is as thick again towards the tail, and has a long head and mouth, with ſharp teeth, which are exceeding ſmall. It delights in rocky places, and is valued as a dainty.

The SEA COCK is more like a ſea monſter than a fiſh, and is about two feet long, with a broad thick body, a great part whereof belongs to the head. On the back there are two long fins, but one is longer than the other, and below there are three more that are very long and ſlender. The tail is forked, and of a brown colour, but the belly is yellow: the ſkin glitters like ſilver, and the fins are red. It is caught in the ſalt water.

The WHITE FISH has a thick ſhort head, and a brown back, with a blue belly, inclining to yellow: the fleſh is pretty well taſted.

The GRUNTING FISH is ſo called from the noiſe it makes when taken. It is very plump, and about a ſpan in length, with a head not unlike a Ruff:

there are three lines, which run on each ſide, two brown, and one yellow. The fleſh is very well taſted.

⁂ The HOG FISH is not above a ſpan in length; the colour of the ſcales is inclining to a blackiſh green; the fins and tail are of the ſame colour, but the eyes are yellow. It is a freſh-water fiſh, very plump, fat, and well taſted.

⁂ The *Eaſt-Indian* GURNARD is almoſt round, with a ſkin full of knobs and ſpots, and of a browniſh colour ſtreaked with black: the head is very thick, ſhort, and full of knobs, with a large mouth and red eyes: the tail is alſo very round and ſhort, and on each ſide of the body is a red fin. The fleſh is pretty well taſted.

⁂ The SEA LOUSE is an odd ſort of a fiſh, covered with a ſhell, about a foot in length. It has the appearance of a round lump, with a very long tail, and ſmall legs or fins on each ſide. Its colour is gray, inclining to green. It is caught near *Batavia*, and is very ſeldom eaten, unleſs by the *Javaneſe* and *Chineſe*.

⁂ The *Eaſt-Indian* LAMPREY, or rather EEL-POUT, is about a foot long, with a ſmooth ſkin, ſlippery like an Eel, though not ſhaped like one. It is brown on the back, there are yellow ſpots on the belly, and the fins under the belly are purple: the head is made like that of a Snail, having feelers thereon: the fins are venomous, though the fleſh is agreeable to the taſte. It is caught in ponds and lakes.

⁂ The CABOS is a kind of an Eel-Pout, but larger than the former, being about two feet in length, and very fat: the ſkin is alſo very ſmooth, without ſcales, and of a browniſh colour: the ſnout is pale, ſpotted with black, and the head is ſhort, with the eyes in the forehead. The fleſh is very well taſted.

⁂ The PEN FISH is alſo a kind of Eel Pout, with a ſmooth ſkin, without ſcales, and is about a foot in length: the back is brown, the belly of a pale blue, and the fins are alſo brown; but they are very ſharp and venomous. The fleſh is well taſted, but unwholeſome when eaten too freely. It inhabits lakes and ponds.

The

Indian Flat-Fish?

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40 Sea-Pigeon?

Sea-Hedge-Hog.

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69 Sucking-Fish?

The CROOK-BACK FISH is ſo named from its ſhape, and has a ſmooth ſkin without ſcales, with a white belly, yellow fins and tail. It ſometimes grows to above four feet in length, and the fleſh is in great requeſt all over the *Eaſt-Indies*, on account of its agreeable taſte.

The HORN FISH is ſo called from the horn it has on the top of its head, or beginning of the back. It is about a ſpan in length, or ſomewhat more, with a large head, and little mouth, one half of this fiſh being nothing but head: the ſkin is very bright, the back blueiſh, the belly white, and the fins and tail yellow.

The FLAT FISH is about a foot long, with a ſmooth ſkin without ſcales, and a white mouth: the body ſhines all over like ſilver, and on the back there is a ſmall fin, with one on each ſide. Under the belly there is a ſingle fin, which is in the room of a tail. It is a freſh-water fiſh, and is very well taſted; but is full of ſmall bones, for which reaſon it is of no great value.

The PARROT FISH is ſo called from its mouth, which is hooked like the bill of a Parrot. It is a foot in length, and ſometimes more, and the colour is greeniſh, variegated near the head with yellow: the fins are blue as well as the eyes, which are very ſprightly and large, having a yellow iris: the ſcales are very large, and there are two rows of ſtrong teeth in the mouth, with which it breaks open Muſcles and Oyſters. The fleſh is very firm and well taſted.

The CHINESE FISH is round, and about a ſpan in length, with a head like an Eel, ſmall eyes and a long tail. It is green on the back, and white on the belly. It is a freſh-water fiſh, and thoſe caught in rivers are good; but thoſe taken out of ponds are unwholeſome.

The PIT FISH is no bigger than a ſmall Smelt, and has a round body without ſcales, and full of green and yellow ſpots: they are remarkable for their being able to thruſt their eyes out of the head, and to draw them in again. The fins on the back are ſharp pointed; and, though they delight in muddy places, the fleſh

is very well taſted. It is a very nimble fiſh, and will leap a great way.

The EAST-INDIAN MULLET is a very fine fiſh, which they dry in the ſun, and tranſport to diſtant places. It is of a white colour, chequered with blue and purple, and ſwims very ſwiftly. It is ſo nimble, that it will not only leap over a net, but even a fiſherman's boat.

⁂ The SEA SNIPE is ſo called from its mouth, which reſembles the bill of the land Snipe. Some are five feet long, with a head like that of a hog, and have large bright eyes: there is a long ſharp fin on the back, which reaches from the head to the tail, and is very broad and full of ſpots.

⁂ The SEA KORETTE is ſix or ſeven inches in length, with large yellowiſh eyes, and a forked yellowiſh grey tail: the fins are yellow, and under the belly, which is blue inclining to green, and under the tail, there are ſeveral fins: they are very bright, and ſhine like ſilver, when they are catched at ſea with hooks. The fleſh is very well taſted, and not unwholeſome.

⁂ The SEA CAT is an odd-ſhaped fiſh, whoſe eyes are exceeding large, in proportion to the body: the back is of a purple colour, and the belly is blue ſpotted with purple: the tail, in proportion to the body, is very broad, beſides which there are no fins, except on the fore part of the head, where there are ſeven, which point directly forwards like the feelers of Shrimps.

⁂ Another SEA CAT is of a very ſtrange ſhape, the back part being an oval lump, on which the head ſeems to hang. It has long large eyes, and a ſmooth ſkin inclining to blue, only the belly is brown. The entrails of this fiſh contain a glutinous matter, which ſerves the *Chineſe* to make ink of.

The LEAPING FISH is ſo called, becauſe they are always leaping and playing on the ſurface of the water. It is about the ſize of a Herring, and is without fins on the back: the head is full of knots, and the body is of a greyiſh colour, ſpotted with black; but towards the belly the ſpots are lighter. It is a ſea fiſh, and well taſted, eſpecially when broiled.

The

The PAMPUS is about a foot in length, and a ſpan broad, being not unlike a Plaice; but the ſkin is ſmooth: the eyes are placed on both ſides, and the mouth directly in the middle. It is well taſted.

The *Eaſt-Indian* WHITING is about the ſize of our Whiting, and has a round prominent belly, a ſtraight back, and a turned-up mouth. The tail is forked, and it has only one large fin on the back, with ſeveral ſmall ones between the belly and the tail. It is full of ſtreaks all over the body, and there are two barbs under the mouth. The fleſh is very well taſted.

The FIVE-FINGERED FISH takes its name from five black ſpots on each ſide, reſembling the prints of fingers. It is about a foot and a half long, with a ſmall head, a large mouth, and brown pointed fins towards the tail: the colour is of a ſhining blue, mixed with purple; but there are no ſcales on the body. It is pretty well taſted, and is very common in the *Eaſt Indian* ſeas.

The ROUND FISH has ſome reſemblance to a Whiting, only it has a ſmall head and tail, and a prominent belly, with fins on the lower part of it, like thoſe of an Eel. The fleſh is very well taſted.

The SPOTTED FISH is of a light colour, ſpotted with brown: the head is ſhort and conical, on the top of which is a ſharp fin bending backwards: the tail is broad, and on the back is a very wide fin, near the tail, and a ſmall one under the belly.

The SEA BAT is about eight inches in length, and nearly as broad: two large ſpines proceed from the under jaw, and on the back and belly are two large fins, which reſemble wings: the tail fin is like that of a Dorado.

Another SEA BAT has a head like a toad, is of a darkiſh colour, and the fins very much reſemble the wings of the bird called a Bat. The tail is long, and ſomething like that of the Sharp-ſnouted Ray.

The FORK-TAIL FISH has a long round body, with a very long forked tail, from whence it takes its name. Its head reſembles that of a Herring, with a long barb or briſtle on the top of it, and two more below the mouth, like thoſe of Shrimps, but larger,

which they keep close to the body when they are ſwimming. The ſize is like that of a Mackrel, but the taſte is not extraordinary.

The PYED FISH is ſo called from its colour, its tail and fins being brown, ſpotted with pale blue ſpots. It is about a foot in length, pretty thick, and without ſcales: the eyes, which are yellow, are ſurrounded with a blue circle, and under the throat there hangs a crop. It has a little mouth, and on each ſide there is a yellow fin. It is in great eſteem among the native *Indians*, being well taſted; but in ſome part of the belly there is a venomous matter, which muſt be taken out when gutted.

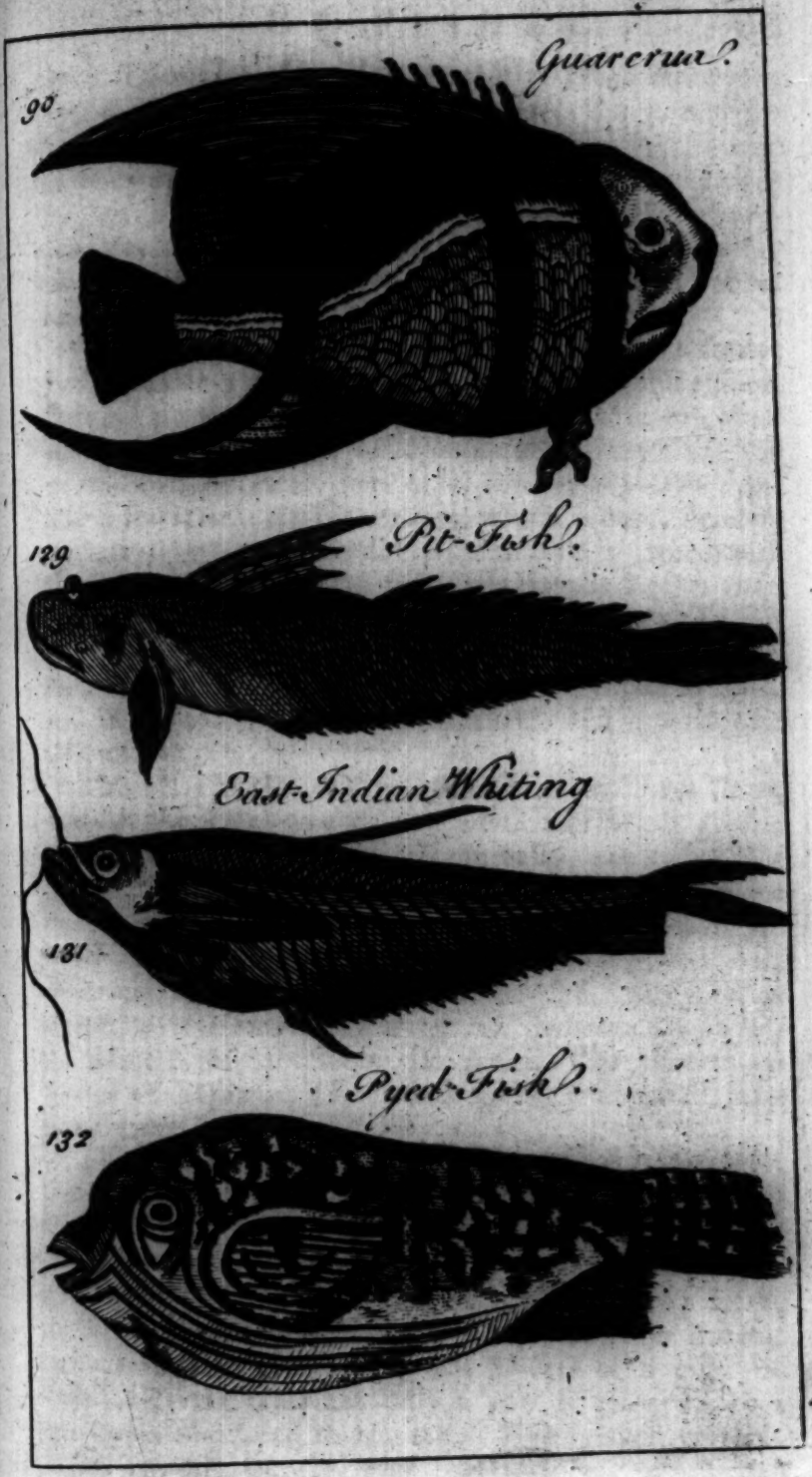
CHAP. XXV.

Of the Weſt Indian *Fiſh.*

THE BECUNE, or SEA PIKE, is very like a river Pike, only it is much larger; for ſometimes it is met with above eight feet in length. It is a very greedy fiſh, and moſt dangerous in the water; becauſe it can bite more eaſily than a ſhark, and will not be driven away by any noiſe that can be made. The fleſh has the ſame taſte as a freſh-water Pike; but there is often great danger in eating it; for, unleſs the teeth are white, and the liver ſweet, it is venomous.

The CARANGUE is a white flat fiſh, and yet the eyes are placed on each ſide the head. It is from two to three feet in length, eighteen inches broad, and ſix thick: the back fins are very unequal, and thoſe on the gills are pointed, and very near the head: the tail is forked. Theſe fiſh are in great numbers near the *Caribbee* iſlands, and the fleſh is exceeding good, even preferable to that of a Trout.

The CAPTAIN is a fiſh that is red all over, and has one fin on its back, which is very long when it is erected, and armed with large prickles; the gill fins are of the ſame make, and they fight other fiſh therewith. It is pretty much like a Carp, being covered with


Guarcrum?
90.
Pit-Fish.
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East-Indian Whiting
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Pyed-Fish.
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with ſcales like that fiſh; but it is much more long and thick, ſome being above three feet long, and ten inches in diameter. Theſe fiſh ſwim in ſhoals, and it is common to take ten or a dozen of them at a time in a net: there are ſome ſix feet long, thick in proportion, and covered all over with ſpots twice as big as thoſe of a Carp. The fleſh is white, well taſted, and very nouriſhing.

The SEA NEEDLE, of the *Weſt Indies*, has a ſquare body, above a foot in length, and of a blueiſh colour. It is a little greeniſh on the back, and of a ſilver colour under the belly: the head is almoſt triangular, and at the two upper corners of it there are yellow eyes, and a ſnout near ten inches long, which is hard, ſlender, and as ſharp as a needle: the mouth is armed with ſmall hooked teeth, and the lower jaw is longer than the upper: the fin that runs from the head to the tail is green, and ſhines like glaſs; and there are two fins near the head, beſides two others under the belly: the tail is forked like that of a Mackrel, and is white and well taſted.

The SEA PARROT is in ſhape much like a Carp, and all the ſcales on the back are of a browniſh green; but thoſe below it, as far as the belly, are of a light green. It has no teeth, but in their room there are two exceeding hard bones: the fins and tail are beautifully variegated with blue, yellow, and red, inſomuch that, when they are expanded, they look as beautiful as a Parrot or Parroquet, from whence it has its name, and not from its ſnout, like that taken notice of before. The fleſh is good, well taſted, and nouriſhing.

The MURÆNA, of the *Weſt Indies*, is a ſort of a Sea Serpent, but ſhaped like an Eel, though not ſo round: they are ſeldom ſeen above two feet in length, and four inches in breadth. The head is round, and the mouth wide, armed with two rows of ſtrong teeth, as ſharp as needles: the ſkin of the female is brown, and variegated with ſpots, like flowers of a gold colour; but the male has only a row of gilt ſpots that run from the head to the tail. The greateſt particularity of this fiſh is, that the great fin, which runs from

from the head to the tail, has rays that bend forward inſtead of backward.

The PILOT FISH is about the ſize and ſhape of a Mackrel, with a long ſmooth head, and a ſnout which advances four inches beyond the mouth. It has two ſmall fins near the head, and one that runs along the back from the head to the tail, beſides another under the belly of the ſame length: the head is very ſmall, and the body is covered with a ſkin that has ſpots in the form of a lozenge. The *French* call it a Pilot Fiſh, becauſe, as they ſay, when it meets with a ſhip it always follows it till it reaches the harbour; it likewiſe keeps company with Sharks.

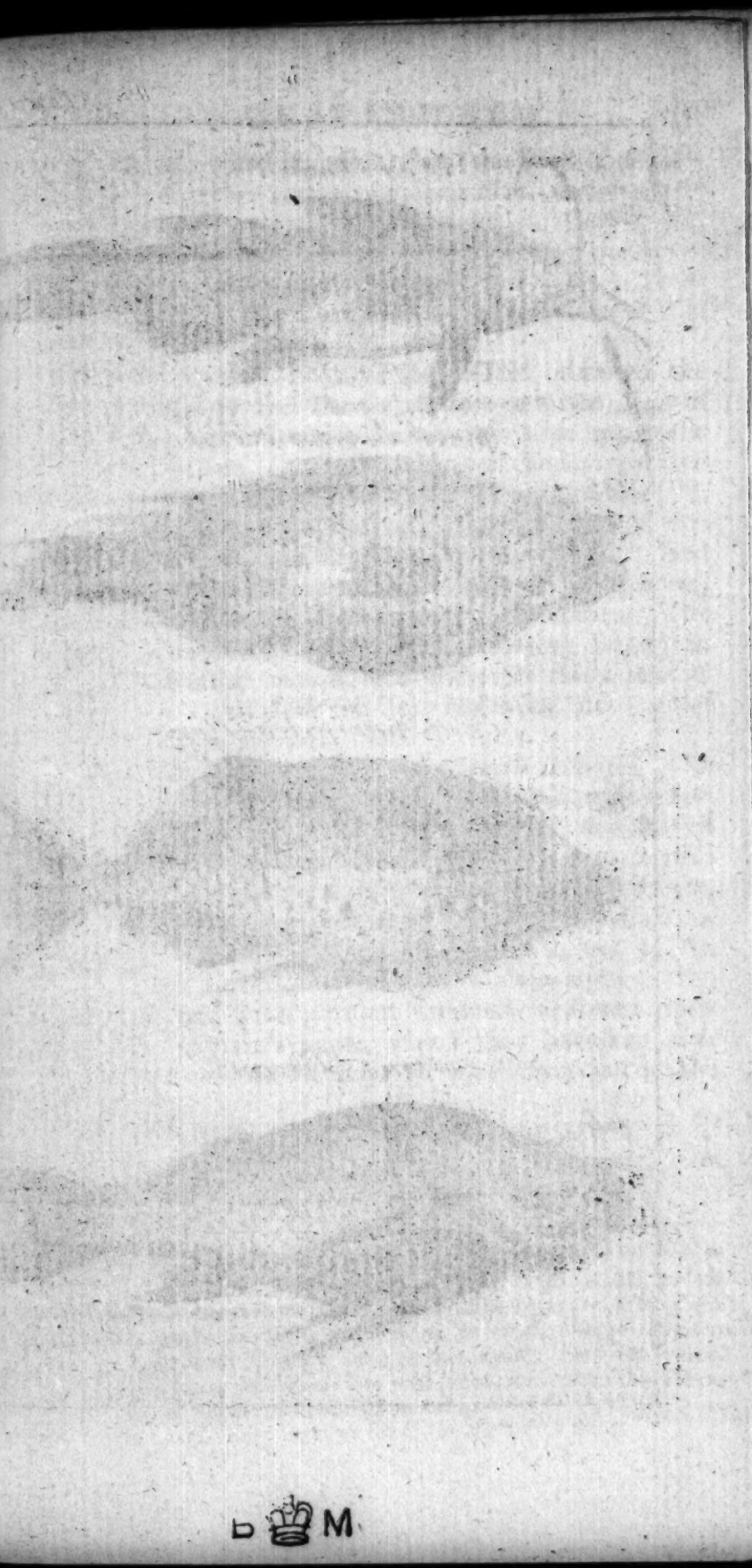
CHAP. XXVI.

Of the African *Fiſh, near the Cape of* Good Hope.

THE SILVER FISH is of the ſhape and ſize of a Carp of a pound weight, and the taſte is not much different. It is of a whitiſh colour, and adorned with ſilver ſhining ſtripes, that run tranſverſly from the back to the ſides, whence it ſeems to be covered with leaf ſilver: the mouth is furniſhed with ſmall ſharp teeth.

The BENNET is a ſea fiſh, and is often taken with a hook by the ſailors. It is nearly as long and as thick as a man's arm, and weighs ſix or eight pounds. It is a very beautiful fiſh, having large ſcales of a deep purple colour ſtreaked with gold: the eyes are red, the mouth little, and without teeth; and near the gills there are two fins of a gold colour: the tail is red, and looks like a pair of ſciſſors when open: the ſcales are tranſparent, for when they are taken off the ſkin is of a ſhining purple: the fleſh is red, and divided into flakes by a ſort of membrane; though it is a little dry and hard, it is well taſted, and eaſy of digeſtion.

The HOTTENTOT FISH are ſo called, becauſe the *Dutch* firſt bought theſe fiſh of the *Hottentots*. They are of two or three ſorts, one of which has its back and



Pen-Fish?

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Jacob-Evertsen Fish?

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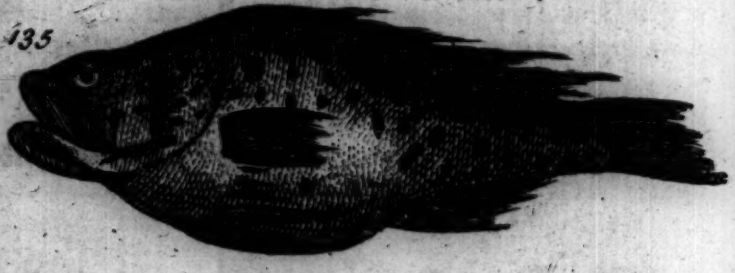

East-Indian Sea-Hog.

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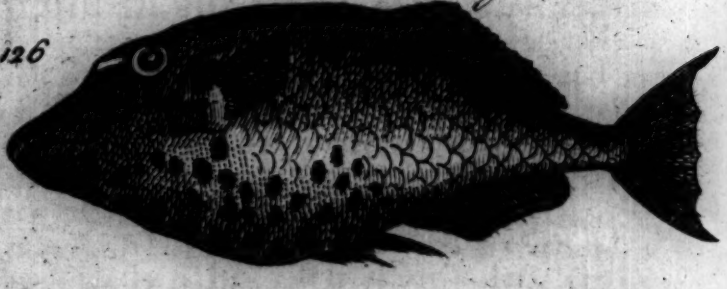

Stone Bream?

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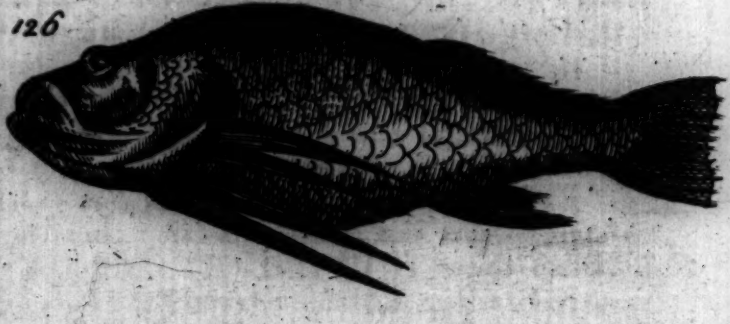

and ſides of a blackiſh colour, and the head of a dark purple. Another ſort is of a deep blue, and ſeems to be ſpotted. The firſt ſort is ſomewhat more round, broader and ſhorter than the ſecond. It weighs about a pound, and is ſeven or eight inches long. Theſe may be called Sea Breams, from their likeneſs to that fiſh *.

The JACOB EVERTSEN FISH is called the SEA BREAM by the *Dutch*. There are two ſorts of them, the firſt of which is covered with red ſcales ſpotted with blue, except the middle of the body, which is of a gold colour, and on the belly it is of a pale red. The eyes are large and red, with ſilver-coloured circles about them; but the mouth is ſmall, and furniſhed with ſlender teeth; it appears to be under the throat, and its fleſh is excellent and very wholeſome. The ſecond ſort differs from the former in being larger, in having a ſmaller mouth, and under the throat it is of a deep red. All theſe fiſh keep in the ſea, but the two laſt are ſeldom met with in deep water.

This fiſh has its name from *Jacob Evertſen*, who lived at the *Cape*, and had a large red noſe, with a ſkin ſo pitted with the ſmall pox, that when he was ſhaved ſome of the hair always remained in the pitts. At this time his face had a great reſemblance to the Red Bream, as well on account of its colour, as the ſpots which remained. This man ſailed once to the iſland of *St. Maurice* to take theſe fiſh; and the ſhip's company being on ſhore, and in a pleaſant humour, beſtowed upon them the captain's name, which they have kept ever ſince, not only at the *Cape of Good Hope*, but in the *Eaſt-Indies*.

The CABELJAU, ſo called by the *Dutch*, is of an aſh colour, and covered with large ſcales, and there is

* Theſe fiſh feed upon ſea-weeds, and any filth that is thrown into the ſea. They are but ſeldom caught with a net, unleſs driven by a tempeſt near the ſhore. The *Hottentots* take them with an angle, whiſtling and making as much noiſe as they can at the ſame time; for they imagine this makes them bite ſooner. This fiſh is very wholeſome and well taſted, and when the fiſhermen cannot diſpoſe of them while freſh, they ſalt and dry them in the ſun, and keep them to ſell to the maſters of ſhips.

is a black liſt runs from the head to the tail. It is two or three feet long, and has very hard fins. This fiſh is very nouriſhing, and good for the ſlaves as well as ſuch as work hard.

The PLAICE, ſo called, becauſe it is like one, being a flat fiſh near an inch thick. On each ſide the mouth there is a large round ſpot, which ſhines like chryſtal. The ſnout is pointed, and almoſt tranſparent; but the lower jaw is covered with a rough ſkin. There are alſo ſhining ſpots on ſeveral parts of the body, and the tail is very thin. The fleſh is very hard and not eaſy of digeſtion, nor is it well taſted. It has no ſpines or bones, it being a griſtly fiſh.

The STOMPNEUSEN, that is the flat noſe, is ſo called, becauſe the fore part of the head is flat, the ſcales are large and of a purple colour, and they have great eyes, with round ſharp teeth.

The ZEE-TONG is little different from a Sole, if not the ſame fiſh. Some of thoſe that are ſo called have ſmall ſcales, and others have none at all. The eyes are upon the back, which is blackiſh as well as the fins; but thoſe under the belly are white, the belly itſelf being of the ſame colour.

CHAP. XXVII.

Of bloodleſs ſoft Fiſh.

THE POLYPUS, or MANY-FOOTED FISH, is large, and reſembles a Cuttle Fiſh, having a belly of the ſame ſhape. The gullet is long, and at the end of it there is a crop connected to the belly, with only one gut that has no fold. The head, when it is alive, is very hard, and ſeems to be inflated. It has eight long thick paws or feet, which ſerve for ſwimming, walking, and bringing any thing to its mouth when it wants to eat. Theſe paws are at ſome diſtance from each other, but they are joined together by a thick membrane; and the four on the middle are the largeſt. The other four may be called barbs, and

and the eyes are placed on the top of two of theſe paws, and between them is the mouth furniſhed with teeth. It carries on its back a long body made like a tube or pipe, which it makes uſe of like a rudder when ſwimming. The fleſh is not covered with any apparent ſkin, and it is ſpungy, hard, and not eaſy of digeſtion *.

⁂ The CUTTLE FISH is of an oblong ſhape, being about ſix inches in length, and three and a half in thickneſs. The body is ſomewhat oval; but broadeſt near the head, and grows ſmaller towards the extremity, where it is obtuſely pointed. Its back is covered with a ſhell as large as a man's hand, and about an inch thick in the middle, but it is more ſlender on the ſides. It is hard above, but very ſpungy and brittle below, being very white, and taſtes a little ſaltiſh: the goldſmiths make uſe of it for many purpoſes. Under its throat there is a veſſel or bladder full of liquor blacker than ink, which it ſheds in the water when it wants to be concealed, or would eſcape from the fiſhermen. There are two ſorts of legs joined to the head, which ſerves this fiſh for ſwimming and bringing any thing to its mouth. The two ſhorteſt are in the middle, and are ſerrated on the inſide. Next to them are two long ones, one on each ſide, and the ſix remaining are generally turned backwards, being of a pyramidal figure. It lives upon ſmall fiſh, and is met with near the ſhores of the ocean, as well as of the *Mediterranean* ſea. The fleſh is good to eat.

The CALAMARY, or the SLEEVE FISH, is akin to a Cuttle Fiſh, and has an oblong griſtly body covered with two ſkins, in which it differs from the Cuttle Fiſh, and in having ſofter fleſh; however, it has ten legs, four of which, in the middle, are pyramidal, and have rough bony tubercles on the inſides of each. On each ſide of theſe is another, which is very long and thick at the extremities, which ſeem to have tubercles like ſhells thereon, as the two following pair

* This fiſh is found in the *Adriatick* ſea, and feeds upon ſhell-fiſh, as well as upon human bodies, when it meets with any: it will likewiſe eat fruits, herbs, and is fond of oil.

pair have through their whole length, that is on the inſide, and are alſo of a pyramidal ſhape. On the belly there are two receptacles full of very black liquor, which might ſerve for ink.

CHAP. XXVIII.

Of Cruſtaceous Fiſh.

THESE are of a middle kind, between the ſoft and ſhell-fiſh; for being covered with a thin ſhell, they in ſome ſort agree with the ſhelly kind; and as the inſide is fleſhy, they in that reſpect agree with thoſe juſt deſcribed. There is one circumſtance peculiar to theſe animals, or at leaſt as far as we know hitherto, namely, that if by any chance they loſe one or more of their claws, not excepting the largeſt, they will grow again.

The LOBSTER is ſo well known, that it ſtands in little need of a deſcription. The ſhell is black before it is boiled, but afterwards it is red. It has eight claws, or legs, of which the two foremoſt are by much the largeſt. Lobſters always feed at the bottom of the water, and ſeize on their prey with their large claws; and when nothing better offers, they ſearch the beds of mud and gravel for the worms that lie therein. The fleſh is well known to be a great reſtorative, and good for conſumptive people.

The ſtones taken out of Lobſters, falſely and improperly called Crab's eyes, are found in the bodies of fiſh of this kind, which produce two every year, that is one on each ſide the lower part of the ſtomach, and neareſt the head. Theſe ſtones take their origin between the two membranes of that organ.

Lobſters once a year, and about the beginning of *May*, caſt their old ſhells, and nature ſupplies them with a new one. Some days before this neceſſary change, the animal ceaſes to take its uſual food. Juſt before caſting its ſhell, it rubs its legs againſt each other, and uſes other very violent motions of the body.

body. It then ſwells itſelf in an unuſual manner, and by this means the ſhell begins to divide at its junctures, between the body and the tail. Then, by the ſame operation, it diſengages itſelf of every part, one after the other, each part of the joints burſting longitudinally till the animal is quite at liberty. This operation, however, is ſo violent and painful, that many of them die under it: thoſe which ſurvive are feeble, and their naked muſcles ſoft to the touch, being covered with a thin membrane; but in leſs than two days this membrane hardens in a ſurpriſing manner, and a new ſhell, as impenetrable as the former, ſupplies the place of that laid aſide *.

The SEA LOCUST, or PRAWN, is a ſort of Lobſter, and has two large horns or feelers placed before the eyes. They are rough and prickly near the roots, where they are very thick, and from thence they grow ſmooth and more ſlender till they terminate in a point. They can move them on which ſide they pleaſe. The eyes are horny, ſtanding out of the head; they are moveable every way, and are defended with exceeding ſharp prickles. On the ſides of the mouth there are ſmall appendages like little feet, the back is very rough, with prickles, and on the forehead there is a large one. On each ſide there are five claws, the foremoſt of which are very ſmall in compariſon with thoſe of a Lobſter. The tail is ſmooth, being without prickles, and they conſiſt of five ſhells, which terminate in fins on each ſide, which enable them to ſwim from place to place; and in this tail the whole ſtrength of the Prawn conſiſts. The two fore teeth are very large, and between the mouth and the ſtomach there is a ſmall one, as alſo ſeveral in the ſtomach itſelf. They receive the water through the mouth, which they tranſmit to the gills, that are more numerous in this fiſh than in any other of this kind. The back is of a blueiſh black, and the upper

* Lobſters are taken in pots, as the fiſhermen call them, which are made of wicker-work. In theſe they put the bait, and throw them to the bottom of the ſea, in ſix or ten fathom water. The Lobſters creep into theſe for the ſake of the bait, but are not able to get out again.

upper fore teeth are three times larger than the lower; but they are both ſharp pointed. They are found in the *Mediterranean* ſea, particularly near *Genoa*. The fleſh is very good, and they are beſt when the ſpawn is within the body at the time of the full moon *.

The ELEPHANT LOBSTER is ſhaped pretty much like a common Lobſter, only the fore claws are longer, and the nippers, which are more thin and broad, open wider than in any of this kind. There are three ſmall claws next the large ones, which are long and prickly; and there are two more, one on each ſide, which are very ſmall and ſmooth, having neither prickles nor hairs. There are two very long feelers that are exceeding ſmall, beſides other ſhort ones, on the forehead, among which there is a ſhort one in the middle, which is not ſerrated. Theſe laſt ſerve as a defence for the eyes, which are horny and prominent. The whole body is undulated, like watered tabby, and the ſhells of the tail, as in other Lobſters, end in five fins variegated with lines. The fleſh is accounted a delicacy in *Italy*.

The RIVER CRAY FISH differs little or nothing from ſome Lobſters, except that of being leſs. The body is round, and the head is terminated by a pretty broad horn, which is ſhort and pointed, under which the eyes are placed. On the fore part of the head there are four feelers or horns, two long and two ſhort, and the ends terminate in hairs. The pinchers are forked, rough, dentated, conſiſting of five joints, and there are four feet on each ſide, the two firſt of which, next the pinchers, are cloven at the end, and the next two are each furniſhed with a ſpur. The upper part of the body is covered with five ſhelly plates, and on the tail there are five fins †.

The

* In the winter, theſe fiſh frequent the rocky places near the ſhores; but in the ſummer they go back to the deeps. They feed upon the fry of fiſhes, and ſpawn about *Auguſt*.

† Cray-fiſh are to be found in almoſt every brook, river, and rivulet in *England*, though in ſome parts more than others. Their places of abode are in holes on the ſides of banks, under the ſurface of the water, where thoſe employed in taking them put in their hands and draw them out. Some are ſo expert in taking them, that they will catch ſeveral dozen in an afternoon.

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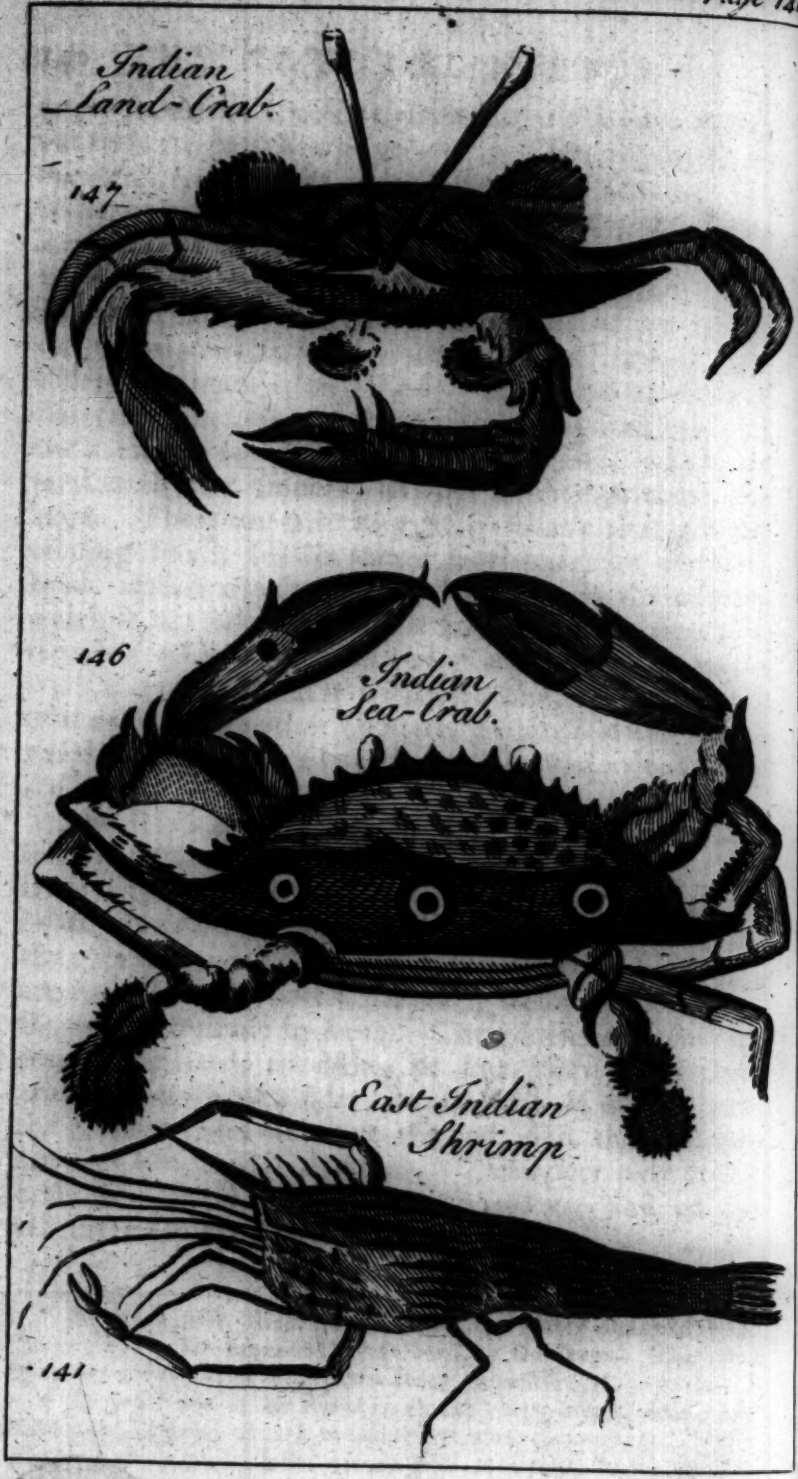
Indian
Land-Crab.
147
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Indian
Sea-Crab.
East-Indian
Shrimp
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The SHRIMP has a tail ſomewhat like the Lobſter kind, but it has no nippers; yet has more claws. In ſome places they are blackiſh in the ſpring, but afterwards become white. Some have ſharp horns fixed at the top of the head, among which the eyes are placed, and the gut runs through the tail, as in the former. They live in ſalt water lakes, and in rocky places on the ſea ſhore. In the *Eaſt-Indian* ſeas, they are of a larger ſize, and keep at the bottom.

The COMMON SHRIMP is the ſmalleſt of this kind, and is truely and properly the Shrimp. Some of theſe are ſo ſmall, that a thouſand will ſcarce weigh a pound; but this kind is not known in *England*, though it is common at *Venice*, and in *Gaſcony*, where they eat them without taking off the ſhells. The ſhape of our Shrimp is like that of the gibbous kind, from which it differs very little, except in ſize. It is common on the ſea ſhore, and in the mouths of large rivers, as well as at a conſiderable diſtance from the ſea. The fleſh is very ſweet, and is commonly uſed as ſauce for other fiſh, though ſometimes they are eaten alone.

⁂ There is a SHRIMP in the *Eaſt-Indies*, that grows to be near a ſpan in length, and has a ſhell like ours. It is of a ſallow colour, with a red forked tail. Several feelers proceed out of the head, two of which are more remarkable than the reſt, being long and ſlender. The fleſh is very well taſted, and five or ſix are ſufficient for a meal.

The SEA CRAB is of different kinds, and therefore it is no wonder the deſcription ſhould differ in different authors. They have generally a roundiſh body; the back is a little arched, and the tail turns up under it, lying in a cavity made for that purpoſe. They are of different ſizes, for ſome will weigh a great many pounds, but thoſe that are moſt common, are equal to about twelve ounces. The male is diſtinguiſhed from the female by having a broader tail, in the ſame manner as Lobſters. But as a Crab is generally well known, it does not need any farther deſcription.

The SQUARE CRAB, of the *Caribbee-Iſlands*, is not above two inches long or broad. It has two nippers, which are very ſhort and brittle, as well as the ſhell and every

every other part of its body. They are met with among the rocks by the ſea ſide, where great numbers of their old ſhells are ſeen, which they caſt every year; and they are ſo entire, that any one would think the bodies of the Crabs were ſtill within them. The only difference is, that when they are living they are grey; but when the ſhells are deſerted, they are beautifully variegated with red and white. They have two ſmall prominent eyes, which look like tranſparent grains of barley, and they ſhine like chryſtal. They are ſaid to be very careful in watching the opening of Oyſters, Muſcles, and other ſhell-fiſh; for then they throw themſelves into the ſhells to devour the fiſh. There is another ſort, that have a ſhell, which conceals all their feet, and the tail is as ſharp as a dagger at the end. The ſhell is not larger than a crown-piece; but the tail is as long as a man's little finger. Under this ſhell there are five ſmall feet, which are all nippers, and with which they pinch thoſe that catch them; however, they can do no great harm.

The VIOLET CRAB, of the *Caribbee-Iſlands*, is a land animal, and is in ſhape like two hands cut through the middle and joined together; for each ſide looks like four fingers, and the two nippers reſemble thumbs. All the reſt of the body is covered with a ſhell as large as a man's hand, and bunched in the middle; on the fore part of which there are two long eyes, of the ſize of a grain of barley, as tranſparent as chryſtal, and as hard as horn. A little below theſe is the mouth, covered with a ſort of barbs, under which there are two broad ſharp teeth, as white as ſnow: they are not placed, as in other animals, above and below, but on each ſide, not much unlike the blades of a pair of ſciſſors. With theſe teeth they can eaſily cut leaves, fruits, and rotten wood, which is their common food.

The ſhell is full of a thick, fat, fibrous liquor, with which the inhabitants make ſauces. In the middle of this there is a bitter ſubſtance, which the inhabitants call the gall; but which, however, is nothing elſe than the ſtomach. Under the body there is a ſort of breaſt-plate, compoſed of ſeveral pieces ſet together, and under it there are five or ſix barbs on each ſide.

Theſe are generally of a violet colour, though there are ſome variegated with blue, white, and violet. The circumſtance moſt worthy of admiration in this fiſh is, their deſcending from the mountains in *April* or *May*, when the rains firſt begin to fall; for then they ſally out from the hollow trees, and rotten ſtumps, under the rocks, and from a vaſt number of holes, which they make in the earth. Then the ground is covered with them, inſomuch, that you cannot ſet your foot thereon without treading upon them. They ſeem to be afraid, that the rain ſhould not laſt long enough; for they get down to the river ſides and marſhy places as faſt as they can, that they may ſecure a retreat, if the weather ſhould become fair, and that they may ſhelter themſelves from the heat of the ſun-beams, which they do not at all like.

They deſcend in as much order as an army under the command of a general, and are commonly divided into three bands or companies; of which the firſt conſiſts of the males, which are more ſtrong, large, and robuſt, than the females, and conſequently are moſt proper to overcome obſtacles, and clear the way for the reſt. Theſe are like the avant-guard of an army, and are often obliged to halt for want of rain, and ſeek a new lodging till the weather changes. The main body of the army is compoſed of females, which never leave the mountains till the rain is ſet in for ſome time; and then they ſally into the fields, being formed as it were into battalions, near three miles in length, and forty or fifty paces in breadth, but ſo cloſe, that they almoſt cover the ground.

Three or four days after, the rear-guard follows, which conſiſts of males and females, in the ſame number and order as the former: but they do not all take the ſame rout; for ſome follow the courſe of the rivers and canals made by the floods, and ſome march a-croſs the woods, but not in ſuch great numbers as the former. They proceed very ſlowly in the night time, and in the day, when it rains; but when the ſun ſhines, they get to the ſides of woods to avoid the heat, waiting till the cool of the evening. When they are terrified, they march back in a confuſed and diſorderly manner, holding

holding up their nippers, with which they pinch ſo hard, that they tear off a piece of the ſkin: they clatter theſe nippers from time to time, by ſtriking them together, as it were, to threaten thoſe that come to diſturb them.

If it happens, in their deſcent, that the rain ceaſes, and the weather becomes fine, which is not ſeldom, they all make a halt, and take up their lodging where they can, ſome under the roots, and others within hollow trees; but thoſe that have no ſuch opportunity, make holes in the earth.

In dry ſeaſons, they are ſometimes three months in getting down to the ſea ſide; whereas, in heavy rains, they will reach it in eight or ten days.

When they have gained the ſea, they go into the water and caſt their ſpawn. All the Crabs in theſe iſlands, as well great as ſmall, males and females, make a progreſs once a year down to the ſea, where, when they are arrived, they let the waves, that beat upon the ſhore, flow over them two or three times, and then withdraw to ſeek a lodging. In the mean time, the ſpawn grows larger, proceeds out of the body, and ſticks to the barbs under the breaſt-plate. There is a bunch of them as big as a hen's egg, which are like the roes of Herrings. Some days after, they go to the ſea again, where they ſhake off their eggs, and about two thirds of them are immediately devoured by the fiſh, which the native *Caribbees* call Tytira, that are then ſo numerous, that the ſea near the ſhore is quite black with them. This is an excellent ſeaſon for fiſhing; for then, with one draught of the net, they catch as many fiſh as twenty men can draw out. The eggs of the Crabs that eſcape are hatched under the ſand, and ſoon after millions at a time of theſe little Crabs are ſeen travelling towards the mountains.

When the ſpawning time is over, theſe animals become ſo feeble and lean, that they can hardly creep along, and the fleſh at that time changes its colour; for which reaſon moſt of them ſtay in the flat parts till they recover, making holes in the earth, which they ſtop the mouths of with ſoil and leaves, that no air may enter

enter therein. There they throw off their old ſhells, which they leave, as it were, quite whole; and it is hard to ſay how they can get out, eſpecially when it is conſidered what a great number of joints there are. After this, the Crabs are quite naked, and almoſt without motion for ſix days together; but then they are fat, fleſhy, and in very good order, being covered with nothing but a very fine ſkin, which in proceſs of time hardens into a ſhell.

The WHITE CRAB, of the *Caribbee Iſlands*, is alſo a land Crab, and has nearly the ſame property as the former; but with this difference, that they are ſo much bigger, that one of the White ones is worth three of the Violet.

The SOLDIER CRAB is about three or four inches long, and half the body is covered with a hard ſkin or ſhell. Four of the feet have two nippers, of which one is no larger than the other feet; but the other is thicker than a man's thumb, with which it can pinch very ſtrongly, and it ſerves to ſtop up the mouth of the ſhell wherein it lodges. The reſt of the body is like a little pudding, covered with a rough thick ſkin, and is of the ſize of a man's finger, though not above half as long. At the end of this, there is a ſhort tail, compoſed of three ſmall nails or ſhells.

They deſcend every year to the ſea ſide to change their ſhells; for the back part of the body is quite naked. As ſoon as they are hatched, they every one go in ſearch of a ſhell proportionable to their bulk, thruſting their back parts therein, and then they march along as cloathed in armour, from whence they have the name of Soldiers. They go up to the tops of mountains, and take their lodgings in hollow trees, where they live upon leaves, rotten wood, and fruits. The next year, when the ſhells begin to grow too little, they travel down to the ſea ſide again, in ſearch of others that fit them better. When they are there, they ſtop to examine the ſhells that they meet with, and, when they have found one they think will do, they immediately quit their old one, and get into it.

Sometimes it happens, that two make choice of the ſame ſhell, and then a battle enſues; for they will

fight and bite each other till one of them yields, and reſigns the ſhell to the conqueror. When he has got poſſeſſion, he takes three or four turns upon the ſhore, and if he likes it, he keeps it; otherwiſe he betakes himſelf to his old one again, and then chuſes another. This they do often five or ſix times, till they get one to their liking. Within theſe ſhells there is about half a ſpoonful of clear water, which is looked upon as a ſovereign remedy againſt pimples or other breakings out, eſpecially thoſe that are cauſed by the water that drops from the leaves of the machineel trees. When they are taken, they ſeem to be very angry, and have a cry like *gre, gre, gre*, endeavouring to lay hold of the perſon's hand, which, when they do, they will ſooner ſuffer themſelves to be killed, than to let go their hold.

The SEA CRAB of the *Eaſt Indies* is about a ſpan in breadth, and of a moſt curious colour, the ſhell being ſpeckled with yellow ſpots; beſides which there are three of a purple colour incloſed with white rings. The claws are yellowiſh next the body, afterwards white, and at the extremities of a deep purple. The eyes have ſomewhat the appearance of ſmall tacks, and ſtand out an inch from the head.

The GUAIA APARA is a *South American* CRAB, beautifully variegated. One end of the body is terminated with a circle, and the other by a right line. It is three inches broad, and two and a half long, though ſome of them grow to a larger ſize. The fore part of the ſhell is of a dark brown, variegated with whitiſh ſpots; and the hinder is of a whitiſh yellow, adorned with brown ſtreaks that run according to the length. It has eight roundiſh feet or claws, with four joints, which are of a whitiſh yellow colour. Beſides theſe, there are two great claws or nippers, each two inches and a half long, and half an inch broad: the nippers themſelves are but ſmall; for which reaſon it cannot lay hold of any thing ſo firmly as other Crabs. The upper part of theſe claws is armed and dentated like a Cock's comb. The nippers are ſomewhat like the bill of a Cock, which, with the whole leg or claw, repreſents the fore part of the head

of

130 Indian Sea-Cat?

Ribbed Music Shell

129

Soldier Crab.

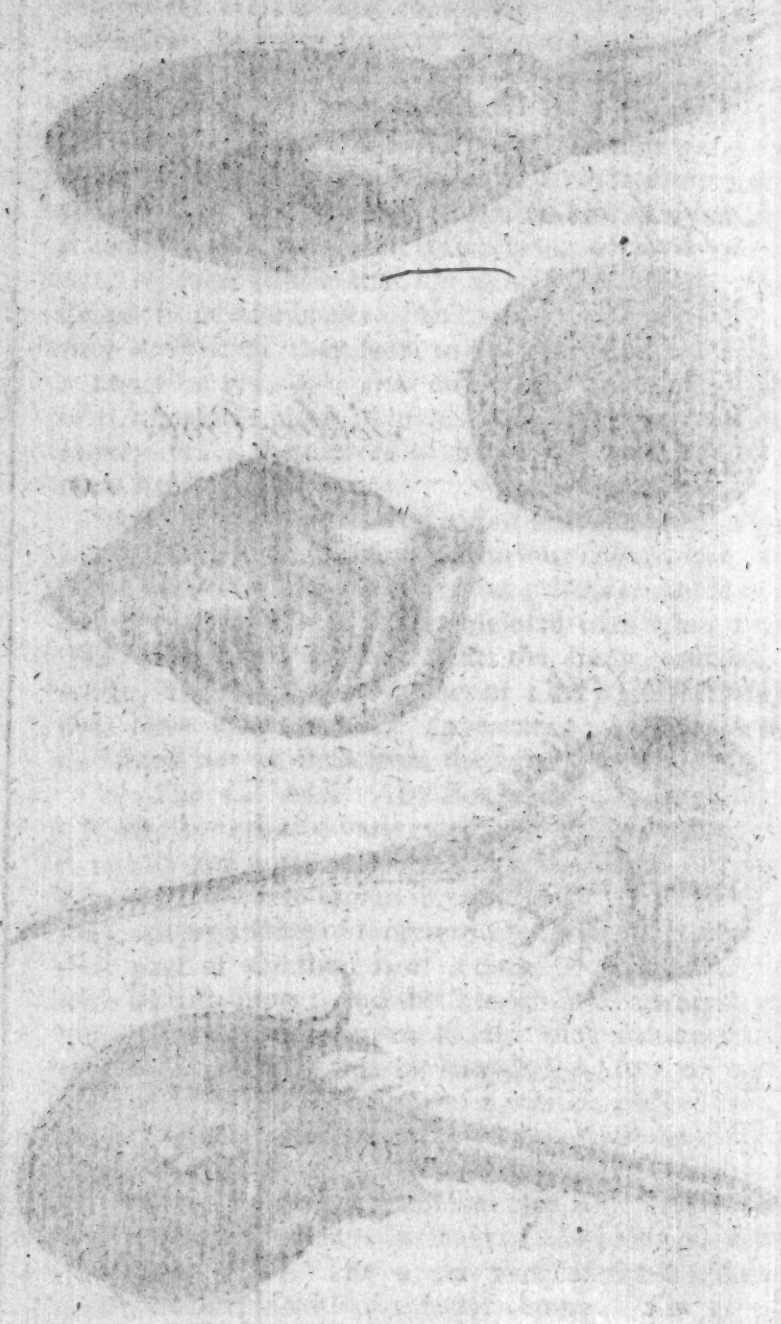
143

American Crab.

142

Sea-Louse?

128



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of that animal, together with its comb. Theſe are alſo of a whitiſh yellow, variegated with brown ſpots. As it ſwims in the water, it blows it up like the bubbling of a ſpring.

The GUANHUMI, or *Indian* LAND CRAB, is of a roundiſh body, but a little compreſſed, and of the ſize of an orange. It has eight legs or claws five inches long, with four joints, and the lower parts are covered with long hairs: the mouth is large, and hairy on its ſides for about an inch, as well as the reſt of the body. Of the great legs or claws, the right is big, and the left ſmall, the right being eight inches long and two broad; but the left is ſcarce ſo long by three parts: the eyes are thruſt out like two ſmall pills, and are drawn in at pleaſure. About the mouth there are two feelers, if they may be ſo called; for they are ſhort, and can be drawn in at the will of this animal.

All theſe Crabs have one property, which is very wonderful. When their nippers are laid hold of, they can part with them very eaſily to make their eſcape; beſides, if one of them is wounded, they immediately part with it, and ſo get rid of the limb and wound together. However, in a year's time, there are other claws, which grow in the room of the former.

There are, beſides theſe Crabs already mentioned, a great variety of others taken notice of by naturaliſts, ſuch as the Blue Crab, the Green Crab, &c. all which we ſhall here omit as very little intereſting to the youthful ſtudent, or the generality of readers.

The POTIQUIQUIYA, of the *Braſilians*, is a Sea Prawn. The length of the body, from the fore part of the head to the tail, is ſeven inches, and the tail ſix: the breadth of the ſhell on the back is ſeven inches, and of the belly two and a half: the tail conſiſts of ſeven ſhells, with as many joints placed over againſt each other, and on the lower part of each ſide there are four fins an inch and a half long, and one broad; likewiſe the lateral extremities of each plate end in a ſharp horn. There are ten claws, five on each ſide, with five joints, and the firſt pair are ſix inches long, the next nine, the third a foot, the fourth ſeven inches, and the fifth five. They have each a crooked ſharp

nail, beſet with many yellow hairs, like hair-pencils. The fore-leg is an inch thick, but the reſt are ſmaller: the ſhell is covered with various ſorts of tubercles, like horns, with ſharp points: the eyes are prominent, and of the ſhape of a cylinder, having behind them two ſtraight horns bending forwards, and an inch in length. Before the eyes, and over the mouth, there are four feelers, two of which are as thick as a man's thumb at their riſe, where there are four joints; and they are a foot and a half long, being beſet with prickles on all ſides. Between theſe there are two leſs with four joints, but they are ſmooth, being without prickles; and about half way from the head they are divided in two, being all together ten inches long.

The PARANCARE is a ſort of Crab, or rather Lobſter, that lives in a borrowed ſhell, and is three inches long; but the fleſh is not eatable. The two fore-legs have nippers, and there are four others three inches long, and behind theſe four more that are ſhort. The tail is an inch and a half long, and the eyes are long and prominent. There are two barbs conſiſting of tufts of hair. The body is covered with a ſkin of a dark cheſtnut colour; and the tail is of the ſame colour ſtreaked with black, according to its length. The lower part of the body is blueiſh, as are the eyes and barb; and over every part are hairs of the colour of oker. The ſhell it lives in is about four inches long and turbinated, being of a paliſh yellow colour.

CHAP. XXIX.

Of the Tortoiſe, or Land and Sea Turtle.

THIS animal is by ſome authors placed among Quadrupeds; but it may without any great impropriety be inſerted here; eſpecially as all ſyſtems of this kind are arbitrary.

The TORTOISE, or TURTLE, is of various kinds, and theſe are diſtinguiſhed into Land and Sea Tortoiſes. That

That diſſected by the academiſts at *Paris* was of the former ſort, and was brought from the coaſt of *Coromandel* in the *Eaſt-Indies*. It was four feet and a half in length from the extremity of the mouth to the extremity of the tail, and fourteen inches thick. The ſhell was three feet long and two broad.

Some of the ancient writers, particularly *Pliny*, pretend to have ſeen Tortoiſe-ſhells fifteen cubits in length; and that one of them was ſufficient to cover a hut which was large enough to lodge ſeveral perſons. However, this was a Land Tortoiſe, and thoſe mentioned by the *Roman* authors were Sea Tortoiſes, where animals generally grow much larger than thoſe of the ſame kind which live on land. However it may be a doubt, whether *Pliny* was not miſtaken in the meaſure of the ſhells mentioned by him; becauſe there have been none ſo large ever ſeen ſince.

The ſhell, and every part of this creature, was of a very dark grey. The upper part was compoſed of ſeveral pieces of a different figure; though moſt of them had five corners. All theſe pieces were connected to a bone, which like a ſkull incloſed the entrails of the animal. It had one opening before to let out the head, ſhoulders, and fore-legs, and another behind to let out the hinder legs and thighs. This bone, to which the ſcales or plates were faſtened, was in ſome places near an inch and a half thick.

One part of this bone lay upon the back, and the other under the belly; they were united on the ſides, and were tied or connected together by ſtrong ligaments, which however allowed the liberty of motion. What we commonly call the ſhell will looſen from the bone, after it has been kept ſome time; but when it is to be taken off immediately, the bone is to be laid upon the fire, and then the ſhell will readily ſeparate from it.

At the great opening before there was a raiſed border at the top, to allow ſufficient liberty for the neck and head to raiſe themſelves upward. This bending of the neck is of great uſe to the Tortoiſe; for by this means they can turn themſelves when laid upon their back. A certain Tortoiſe being laid upon his back, and not

being able to make uſe of his paws to turn himſelf, becauſe they can only bend forwards towards the belly, endeavoured to help himſelf with his neck and head, which he turned ſometimes on one ſide, and ſometimes on the other, by puſhing againſt the ground, and ſo rocked himſelf as in a cradle, till at length he was able to rowl quite on one ſide, and ſo get upon his legs.

Three great pieces of ſhells lay forwards upon the back; and in the middle of each was a round ſtud about a quarter of an inch in height, and an inch and half broad. Thoſe parts which were not under the ſhell were all covered with a looſe ſkin of a grain like *Spaniſh* leather, full of wrinkles. There was no ſkin under the ſhell to cover the parts which were encloſed therein; but it was connected to the edge of each of the two apertures or openings. The ſkin on the head was much thinner than that on the other parts. It was ſeven inches in length and five in breadth; and had ſome reſemblance to the head of a Serpent.

The lower jaw was near as thick as the upper, and there were no apertures for the ears. The noſtrils at the end of the mouth were only two little round holes, which made a very uncouth appearance. The eyes were ſmall and frightful, and had no upper eye-lid, they being ſhut only by means of the lower, which may be lifted up to the eye-brow. Towards the extremity of the jaw bones near the lips, the ſkin was as hard as a horn; the lips themſelves were jagged like a ſaw, and on the inſide there were two rows of teeth.

On each of the fore-paws there were five toes, or rather nails; for the toes could not be diſtinguiſhed but by the nails, the paws themſelves terminating in a round maſs, from which the nails grew out. The fore legs were nine inches in length, from the top of the ſhoulder to the end of the nails, and the hinder legs eleven from the knee to the ſame parts. The nails were an inch and a half long, and rounded away both above and below, being as it were cut in an oval figure, or perhaps worn away with uſe. Their colour was black and white in different places, and without any regularity.

The

The tail was large, being ſix inches in diameter at the beginning, and fourteen inches in length, terminating at the point like the horn of an Ox. The tail happened to be bent at the time of this animal's death, and could never be made ſtraight by any artifice or force whatever. The ſame inflexibility was found in the muſcles of the jaws, which could not be opened but by cutting theſe muſcles aſunder *.

The tongue was of a pyramidal ſhape, and was an inch in length, and one third of an inch broad; but it was but the twelfth part of an inch in thickneſs.

The ears had no outward orifices; but under a ſkin which lay over a depreſſion, on the ſide of the temples, there was a round hole like the orbit of the eye, which was cloſed by a kind of griſtly plait, that was very moveable, and was connected all round the hole to the parts below by a very thin membrane.

Thoſe that have given a deſcription of the *Caribbee Iſlands* have affirmed, that this animal is deaf; but there is little reaſon to think ſo.

The COMMON LAND TORTOISE is full of yellow and black ſpots on the back; the upper part of the ſhell is very convex, and the lower is flat. It has a little head much like that of a Serpent, which he can put out or hide within his ſhell juſt as occaſion requires. He has no upper eye-lid; nor has he any ear or orifice inſtead of one like the former. In the winter time he hides himſelf in the earth, and there continues without any food.

The COMMON SEA TORTOISE differs from the LAND TORTOISE chiefly in ſize, which is larger; but the ſhell is not ſo beautiful, and is of a ſofter conſiſtence. The feet are like the fins of fiſh, becauſe they are uſed for ſwimming. They grow to a very great bulk, for ſome of them near *Braſil* and the *Caribbee Iſlands* are ſufficient to dine eighty or an hundred men.

* The academiſts at *Paris* give us an inſtance of the head of a ſmall Tortoiſe, which, for half an hour after it was cut off, would clack with its jaws, and make a noiſe like that of caſtanets. They ſuppoſe, from the ſtiffneſs of the tail, that the Tortoiſe muſt have vaſt ſtrength in that part, and that he may uſe it as an offenſive weapon.

The HAWKS-BILL TURTLE has a long and ſmall mouth, ſomewhat reſembling the bill of a Hawk. This is the Turtle that produces the ſhell ſo much admired in *Europe* for making combs, ſnuff-boxes, and the like. They generally weigh about three pounds; but the largeſt of all ſix pounds. The ſhell conſiſts of thirteen leaves or plates, and of which eight are flat and five hollow. They are raiſed and taken off by the means of fire, which is made under it after the fleſh is taken out. As ſoon as the heat affects the leaves, they are eaſily raiſed with the point of a knife. The fleſh is but indifferent food.

The GREEN TURTLE is ſo called, becauſe the ſhell is greener than that of any other. It is very clear, and better clouded than that of the Hawks-bill, but it is ſo exceeding thin, that it is only uſed in inlaying. Theſe Turtles are generally larger than the Hawks-bill, and ſometimes weigh three hundred pounds. Their heads are round and ſmall, and their backs flatter than that of the Hawks-bill.

The TURTLE in general is a dull, heavy, ſtupid animal, its brain being no bigger than a ſmall bean, though the head is very large. The fleſh is ſo like beef, that it would hardly be diſtinguiſhed from it, if it was not for the colour of the fat, which is of a yelloviſh green.

They feed upon moſs, graſs, and ſea-weeds, unleſs in the time of breeding, when they forſake their common haunts, and are ſuppoſed to eat nothing. Both the male and female are fat at the beginning of this ſeaſon; but, before they return, the male becomes ſo lean, that he is not fit to eat, while the female continues in good plight, and the fleſh agreeable, to the very laſt. They couple in the water, and are ſaid to be nine days in performing this work. They begin in *March*, and continue till *May* *.

Authors

* The coupling time is one of the principal ſeaſons for catching Turtles; for they are very eaſily diſcovered when they are in the action. As ſoon as they are perceived, two or three people draw near them in a canoe, and either ſlip a nooſe round their necks or on one of their feet. If they have no line, they lay hold of them by

Authors mention other kinds of Tortoiſes; but the preceeding deſcriptions may be ſufficient to diſtinguiſh this ſpecies of fiſh from all others, however they may differ in ſome few particulars; we ſhall therefore only

by the neck, where they have no ſhell, with their hands only; and by this means they catch them both together; but ſometimes the female eſcapes, being more ſhy than the male.

Another way of taking them at this time is with a ſpear, which being thrown at the back of the Turtle pierces the ſhell and bone, and ſticks as faſt therein as if it was ſolid oak. They ſtruggle hard to get looſe, but all in vain; for they take care that the line, which is faſtened to the ſpear, be ſtrong enough to hold him.

The time of taking Turtle upon land is from the firſt moon in *April* till that in *Auguſt*, it being the ſeaſon in which theſe creatures lay their eggs. The number of them is prodigious; for they will lay ſeveral hundred in one ſeaſon. The night before ſhe intends to lay, ſhe comes and takes a view of the place, and, after taking a turn about, ſhe goes to ſea again, but never fails to return the night following.

Towards the ſetting of the ſun, they are ſeen drawing near the land, and ſeem to look earneſtly about them, as if they were afraid to be diſcovered. When they perceive any perſon on ſhore, they ſeek for another place; but if otherwiſe, they land when it is dark. After they have looked carefully about them, they begin to work and dig in the ſand with their fore-feet, till they have made a round hole of a foot broad, and a foot and a half deep, a little above where the water reaches when higheſt. This done, they lay eighty or ninety eggs, or upwards, at a time, each as big as a hen's egg, and as round as a ball. They continue laying about the ſpace of an hour, during which time, if a cart was to be driven over them, they would not ſtir. The eggs are covered with a tough white ſkin, like wetted parchment. When they have done laying, they cover the hole ſo dextrouſly, that it is no eaſy matter to find the place. This done, they return to the ſea. At the end of fifteen days they lay eggs again, in the ſame manner; and, at the end of another fifteen, they do the ſame again, laying three times in all.

In about twenty-five days after laying, the eggs are hatched by the heat of the ſun; and then the little Turtles, being as big as young quails, run directly to the ſea, without any guide to lead them, or ſhew them the way. When there are any caught before they get into the ſea, they are generally fried whole, and are ſaid to be delicious eating.

The men that watch for the Turtles, as ſoon as they have an opportunity, turn them on their backs, which is not performed without ſome difficulty; for they are very heavy, and ſtruggle hard. After this, they haul them above high-water mark, and leave them till morning.

further obſerve, that they may be all kept out of the water for ſeveral months together, without any ſenſible nouriſhment.

CHAP. XXX.

Of turbinated Shell-Fiſh.

TURBINATED Shell-Fiſh are ſomewhat in the ſhape of a top, and are ſurrounded with ſpiral furrows, much like a ſcrew, being wide at the mouth, and terminate by degrees in a point. However, they are greatly different in their ſhape and ſize, as well as in their texture, ſome being harder, and others ſofter; but within they are all nearly alike with regard to their ſurface, which is exceeding ſmooth.

The NAUTILUS, or SAILOR, is of two kinds, one of which generally keeps near the ſea ſhore, on which it is often thrown by the waves, where it comes out of the ſhell, and is taken, or periſhes on the ground. This is a ſmall ſort; but the other keeps in its ſhell like a ſnail, or at leaſt ſeldom comes out of it; but ſometimes thruſts out a ſort of arms. This is ſpoken of by *Pliny*, who ſays, this is one of the principal wonders of nature, becauſe it can ſwim on the ſurface of the ſea like a boat. They delight to be on the ſurface when the water is calm, and their ſhells ſerve inſtead of boats. Then they raiſe up their heads, and ſpread out a kind of ſail, provided by nature, ſailing along in a very agreeable manner. While they are thus employed, if any thing appears that affrights them, they take down the ſail, hide themſelves within the ſhell, and diſappear.

The ſhell ſeems to conſiſt of two parts, the keel, and the ſides, whereas in reality it is but one. It is generally ſo large, that it may be juſt graſped with both hands, though it is but an inch broad. They are not thicker than a ſkin of vellum, and are ſtreaked according to the length; the ſides are jagged, but the diviſions

viſions are roundiſh. The hole by which the Nautilus gains its food, and ſhews itſelf out of the ſhell, is large. The ſhell is brittle, of a ſhining milk colour, and very ſmooth, being in all things like a round veſſel or ſhip. When it riſes out of the ſea, it comes up with the ſhell upſide down, that the aſcent may be more eaſy, and that the boat may empty itſelf of water; but when it is on the ſurface, then it ſets the ſhell to rights. Between the arms of this fiſh, the membrane or ſail is placed as it were like the webbed toes of a bird, but much more thin, being not much thicker than a ſpider's web; but it is ſtrong, and holds the wind as this fiſh ſails along. There are ſeveral threads on each ſide, which it makes uſe of inſtead of rudders, and yet, when any thing comes near it, this fiſh will immediately dive under water.

The PEARL SHELLED NAUTILUS is ſo called, from having a ſhell exceeding bright on the inſide, inſomuch that it may vie with the fineſt pearls.

It is found in the *Archipelago*, as well as in the ocean, and is ſometimes ſeen in the clay pits and ſtone quarries in many parts of *England*.

The LITTLE THICK NAUTILUS is of a roundiſh form, and rarely exceeds an inch and a half in diameter. The ſurface of the whole ſhell is ſmooth; the opening of the mouth is large, and nearly circular, but partly filled up behind by the turn of the ſpiral part of the ſhell into it. The colour of the outſide is of a pale tawny brown, with lines or ſtreaks of a darker colour. The inſide is bright and ſhining like the former, and the mouth opens to a much greater depth, in proportion to the ſize. At the bottom there is an aperture, which runs through a multitude of ſhells, into which the inner cavity is divided. It is a native of the *Gulph of Perſia*, and the *Eaſt-Indian* ſeas.

The THIN EARED NAUTILUS has a very beautiful ſhell, which grows to ten inches in length, and is exceeding thin. The opening of the mouth is very large, and of an oval ſhape, but truncated at the hinder part, where the ſpiral turn enters into it. The edge of the mouth is undulated, and at the hinder extremity there are two appendages called ears, one on each ſide

the turn of the ſhell. The whole ſhell is as white as ſnow, and its outer ſurface is beautifully marked with undulated ridges with circular lines, and a great many tubercles. The back is hollowed all the way, and from its center there ariſes a denticulated ridge. This ſpecies is common in the *Eaſt-Indian*, and ſome parts of the *American* ſeas.

The PAPER NAUTILUS, ſo called from the thinneſs of its ſhell, it being no thicker than ſtrong paper or parchment, is often met with twelve inches long, and is compreſſed on the ſides. The opening of the mouth is very long and narrow, and there are no ears; but the corners of the hinder part of the mouth, between which the ſpiral turn of the ſhell enters the cavity, are high and ſharp. All the outer ſurface is beautifully variegated with undulated lines, and hollow ſpaces between them. A furrow runs all along the back, and the ridges on each ſide it are ſharp and ſerrated.

The THIN NAUTILUS, WITHOUT EARS, is ſmaller than the former kind, for it is but five inches long, and three or four deep. The opening of the mouth is very long and narrow. The colour is of a yellowiſh white, and the ſhell is very thin and delicate. Though there are ſeveral other kinds of this fiſh, yet theſe alone ſeem worthy of a particular deſcription.

The PURPURA is of the ſize of an egg, and ſometimes bigger, and there are ſeveral ſorts of them. The YELLOW LONG SNOUTED PURPURA, with long crooked ſpines, is about four inches in length, and ſometimes more, and the ſhape is nearly of an oval: the ſnout is almoſt twice as long as the reſt of the ſhell, and both this and the body are armed with four rows of long ſpines or thorns, ſome of which are an inch in length, though ſlender, and pointed at the ends, but moſt of them are ſomewhat crooked. The mouth is nearly round, only its opening is continued to the form of a cleft up the ſnout. The natural colour of the ſhell is a tawny yellow, mixed with brown; but when it has lain long upon the ſhore, it becomes white, as moſt other ſhells do.

The VARIEGATED LONG SNOUTED PURPURA is four or five inches long, and the body of the ſhell is

ſhort, and nearly of an oval ſhape. The ſnout is ſlender, and about five or ſix inches in length; the mouth is round, but not very large, and the lip which ſurrounds it is of a reddiſh colour. The ſnout joins to the end of this, and there is a cleft that runs all along it from that part. The external ſurface of the ſhell is covered with large tubercles irregularly placed. The colour is of a duſky yellow, variegated with brown and grey.

The SHORT SNOUTED PURPURA is about two inches long, and its diameter, with the ſpines and thorns, is an inch and a half. The ſhape is nearly oval, and the ſnout is very ſhort. The ſurface of the ſhell is beſet with ſix rows, or oblong protuberances, ſome of which are a third of an inch in height, and jagged at the top. Theſe are generally black, at leaſt in part, though the body of the ſhell is white. This ſhell is frequently found on the ſhores of the *Caribbee-Iſlands*.

The SHORT SNOUTED PURPURA, with three rows of ſpines, is about three inches long, including the ſpines, and as much in diameter. The body is large at the head, gradually decreaſing till it becomes almoſt of the ſhape of a cone, and it has about ſix voluſions. All the ſurface of the ſhell is deeply furrowed tranſverſely, and adorned with three rows of ſpinous protuberances, ſome of which are half an inch in length, and a quarter of an inch broad; but the broadeſt part is at the extremities, where they are hollow below. The colour of the whole ſhell is of a dirty white. What we have before ſaid of the Nautilus, may be applicable to the Purpura, that there are more ſorts of them than merit a deſcription.

The BUCCINUM, or TRUMPET-SHELL, is ſo called from its imaginary likeneſs to a trumpet or horn. It conſiſts of one ſingle piece, and has a large belly, and a wide mouth.

The TRUMPET SHELL, of the iſland of *Goree*, is ſeldom much above half an inch long, and its breadth is leſs by one-half. It has but eight turns, which are a little ſwelled, very narrow, and rough, with tubercles on the outſide. There are five or ſix on the firſt turn,

two

two on the ſecond, and one on the reſt. The ſummit is of an equal length with the firſt turn, and the length of the mouth, or opening, is not quite three times as much as the breadth. The right lip is generally thin, and without teeth. The ground colour is of a deep purple; and in ſome the firſt turn is ſurrounded with two obſcure whitiſh lines.

The TRUMPET-SHELL of *Senegal* is ſmall, thick, and of an oval form, blunt at the upper part, and pointed at the top. It is but half an inch long, and much leſs broad. It is compoſed of ten turns or ſpires, which are all ſmooth, poliſhed, and flatted, except the firſt; but they are not very diſtinct from each other. The mouth or opening is oval, except in the lower part, where it forms a narrow channel, with a ſlight furrow, roundiſh above, and twice as long as broad. The upper extremity forms a ſhort channel, and is cut on the back of the ſhell by a furrow, which is ſomewhat more deep than broad. The right lip is blunt and very thick, though without a border, and ſomewhat wide, being adorned inwardly with eight ſmall roundiſh teeth. The left lip is rounded, and crooked in the middle, like the portion of a circle; it is covered with a ſmall ſhining plate without any ſwelling, and, as it were, wrinkled on the outſide towards the upper extremity. The ſurface of the ſhell is covered with a reddiſh membranous ſkin, ſo thin and tranſparent, that the colours may plainly be perceived through it. The ground is generally brown, and marked with round white ſpecks in the ſhape of lozenges. The animal that inhabits this ſhell has a ſmall cylindrick head, ſlightly furrowed at the extremity; and the feelers are almoſt cylindrick, being blunt at the top, and longer by one-half than the head. The eyes are two ſmall prominent points, placed at the root of the feelers, and the mouth appears like a little round hole placed under the head, about the middle of its length, from which is almoſt continually darted out a cylindrick trunk, almoſt as long as the feelers, which ſeems to be divided at the ends like two lips. The mantle conſiſts of a very ſlender membrane, which extends from the external ſurface of the ſhell, and is folded like a cylindrick pipe, which proceeds from a length

length equal to the fifth part of the ſhell, and lies a little on the left ſide. The body is of a pale white, with oval reddiſh ſpecks when beheld above; but underneath it is of a dirty white, without any ſpots. The feelers are red in the middle, and of a dirty white at the extremities.

The HEDGE-HOG MUREX is three inches and a half long, and about two and a half broad where thickeſt. The body of the ſhell is nearly of a conick ſhape, and of a whitiſh colour, wrinkled on the ſurface with circular furrows. It is alſo ſurrounded with ſeveral rows of long, erect, ſtrong, and ſharp ſpines, or prickles, from whence it has its name. The ſpines are all black, as well as ſome other parts of the ſhell, which give it a very ſingular appearance. It is brought from *Africa* and the *Eaſt-Indies*.

The HEDGE-HOG SHELL, with a ſmooth clavicle, is two inches and a half long, and near two in diameter where broadeſt. The ſhell is of a brownish white, variegated with a deeper colour, which ſeems to be a mixture of brown, olive, and purple. There are three rows of ſpines at ſome diſtance from each other, connected by a ridge, and the clavicle has about five turns. The ſpines are white, which add greatly to the beauty of the ſhell. It is found on the ſhores of *Africa*, near the *Mediterranean* ſea.

The RIBBED MUSIC SHELL, with ſtreaked rings, is about two inches long, and near an inch and three quarters in diameter. The body of the ſhell is ſhort, and there are ſeveral broad low ribs at ſome diſtance from each other. The colour of the ſhell is of a whitiſh brown, and is ſurrounded with three or four rings, conſiſting of four or five ſlender black lines, with reddiſh and blackiſh ſpots between them. It is brought from the *Eaſt-Indies*.

The GOLD-MOUTHED COCHLIA, or SNAIL, is about two inches high, and an inch and a half in diameter. It is thickeſt about the middle, and is ſomewhat ſmall near the mouth; but it gradually tapers the other way to a point. The ſurface of the ſhell is deeply furrowed with ſpiral lines, which are ſomewhat irregular, and have a great number of tubercles thereon, diſpoſed into

into five rows: they are pretty large and blunt at the end, and the ſurface is variegated with a deep and pale brown; but the extremities of the tubercles are paleſt. The colour is not the ſame in all; but the mouth is always of a fine bright gold colour within. It is round, and edged on the circumference with a narrow lip. It is common in *America*, and is found in ſome parts of *Europe*.

The HEDGE-HOG SNAIL is about an inch high, and two inches in diameter near the mouth. The clavicle is a little flatted for two or three turns, and then the ſhell lengthens, and grows broader till near the mouth, where it again becomes a little ſmaller. The mouth itſelf is nearly round, and edged with a narrow lip: there are prominences on the ſhell, which are high, and follow the ſpiral turn, being a third part of an inch in length, and pointed at the ends; and there are others which conſiſt of three or four placed together, and dentated at their extremities. The predominant colour is yellowiſh, and the tubercles are of a fine roſe colour, ſometimes a little tinged with violet: the inſide of the ſhell is white, like the mother of pearl. They are brought from the *Eaſt-Indies*, and ſometimes from *America*.

The SMOOTH RIBBAND SNAIL is one of the talleſt and longeſt, in proportion to its breadth, of all this kind, it being two inches long, and a little more than an inch in diameter. It conſiſts of five ſpiral turns, and terminates in a very ſharp point: the ſurface of the ſhell is ſmooth, and the colour duſky, but paler in ſome places than others. It is variegated with ſeveral beautiful ſtripes, like ribbands, following the ſpiral turn of the ſhell: theſe are of a fine reddiſh brown, with a little mixture of white in ſome places. It is found on the ſhores of many parts of *Italy*.

The WHITE AMMON'S HORN SNAIL differs greatly from the two former, and conſiſts of five ſpiral turns, though it is quite flat, that which ſhould be the point, being ſunk lower than any other part of the ſhell. The diameter is about two inches, and the thickneſs no more than half an inch. The mouth is round, and there the ſhell is largeſt; for it tapers from thence to the

the point in the center. The ſurface is ſmooth, and the colour white.

The WARTY SNAIL is ſeldom above three quarters of an inch long, and half an inch in diameter. It conſiſts of four ſpiral turns, and its top is bluntly pointed. All the outer ſurface of the ſhell is marked with ſpiral lines, and there are others that croſs them, forming a ſort of chequer work. The upper part of the ſhell is of a pale brown, and the tubercles whitiſh; but on the lower part it is tinged with grey, and the protuberances are large, blunt, and of the ſame colour. The mouth is nearly round, and both that and the whole inner ſurface is of a fine pearly white.

The SMOOTH BROWN SNAIL, with a great mouth, is about an inch high, and as much in diameter: the ſurface of the ſhell is ſmooth and even, and the colour is of an agreeable brown, which becomes paler towards the edges, where it is almoſt white: the mouth is large, and of a ſemicircular ſhape: the inner ſurface of the ſhell is whitiſh. It is brought from the *Eaſt Indies*.

The THREE RIBBED SNAIL is an inch and a half in diameter, and the body is large, with a ſmall ſpiral depreſſed clavicle: the whole ſurface of the ſhell is ſmooth, only where there are three narrow ſtripes, which riſe above the ſurface, and run along the whole body, dividing it into ſo many ſpaces: the prevailing colour is a reddiſh brown, which is paler in ſome parts, and the mouth is large and ſemicircular. It is brought from *South America*, and ſometimes from the *Eaſt Indies*.

The TOOTHED SNAIL, or NERITE, is about an inch in length, and three quarters of an inch in diameter. The body is large, and the clavicle ſmall, with a depreſſed ſpiral turn; the colour is grey, variegated with iron grey or a blackiſh colour: the mouth is large and ſemicircular, and the hinder lip is furniſhed about the center with two longiſh blunt teeth, which are ſometimes reddiſh; for which reaſon it is called the *Bloody-toothed Nerite*.

The BANDED SNAIL, with four teeth, is nearly round, and about an inch in diameter: the clavicle is very

very ſmall and depreſſed, and the outer ſurface of the ſhell is formed into raiſed broad bands, running parallel to each other, and ſeparated by narrow furrows. The colour is whitiſh grey variegated with black; but the inſide of the ſhell is of a pearl colour: the fore lip is broad, thick, and prominent, and that behind is very broad, having each two teeth, which are ſometimes white, and ſometimes red, as if they were bloody.

The PRICKLY SNAIL is about three quarters of an inch long, and near half an inch in diameter: the ſhell conſiſts of four turns, and there are upright blunt ridges, with ſmall hollow ſpaces between them. Round the larger turns there are two rows of long ſlender prickles, and the outſide of the ſhell is variegated with a deep reddiſh brown, and a whitiſh pale colour.

The CLOUDED SNAIL is about an inch and a half long, and an inch in diameter, conſiſting of five ſpiral turns, and the extremity of the clavicle is ſmall and blunt: the outſide of the ſhell is ſmooth, and of a pale brown, variegated with ſmall clouded ſpots of very dark brown: the mouth is large, and the inſide of the ſhell of a ſilver colour.

The CONICAL TUBERCULATED SNAIL, or ROUGH TROCHUS, is ſometimes three inches long, and two broad at the baſe: the mouth is moderately large, and the ſhell has ſix ſpiral turns, and blunt at the end; it is beſet with tubercles that are large, blunt, and broad at the baſe, being diſpoſed into five or ſix rows, and the reſt of the ſurface is undulated: the colour is of a fine grey, variegated with another that is blackiſh.

The FRENCH-HORN SNAIL has a flat depreſſed ſhape, and the extremity of the clavicle is ſunk within the reſt of the ſurface. It is about two inches broad, and half an inch thick. The colour is yellowiſh. Moſt of theſe Snails are brought either from the *Eaſt* or *Weſt Indies*.

There are many other ſorts of *Buccinums*, *Murex*, and *Snails*, taken notice of by authors; but theſe are ſufficient to ſatisfy the curioſity of moſt readers. Perhaps, many of the other diſtinctions are in a great meaſure owing to fancy, though it is allowed there may

may be a greater variety, with regard to the colours, and perhaps in the ſhapes; but to allow each of them a diſtinct name, would be extending this work to a tireſome length.

CHAP. XXXI.

Of Turbinated Shells.

THESE ſhells are of the ſimple kind, conſiſting of one piece, and of a long ſlender make, always terminating in a very long fine point. The mouth is narroweſt towards the baſe, and has a ſort of an ear. They are of different ſhapes, and in general they are called Screw-ſhells.

The THICK TURBO, or SCREW-SHELL, with an oval mouth, is ſometimes ſeven inches in length, and two in diameter where thickeſt. The ſhell conſiſts of about fourteen turns, of which that next the mouth is the largeſt, from which they gradually diminiſh to the end, which is pointed. They are all round on the ſurface, which is ſmooth and white, but beautifully variegated with yellow rays and broad bands, conſiſting of a mixture of blue and brown lines; but interrupted by irregular ſpiral lines of the ſame colour. The mouth is large and wide, and the lip thin and not dentated. It is found in *America*, as well as *Europe*.

The NEEDLE-SHELL, or SLENDER SCREW-SHELL, with roundiſh ſpires and a ſmall round mouth, is five or ſix inches long, and the diameter where thickeſt, is not much above half an inch. It becomes gradually ſmaller from the mouth to the other end, where it terminates in a point. It conſiſts of fifteen ſpiral turns, which are all roundiſh or bellied, riſing very high in the middle. The furrows between them are deep and narrow, and the mouth ſmall and roundiſh. It has only a notch, where the ear is placed in the other, and the whole ſurface is perfectly ſmooth. The colour is white, variegated with yellow.

The

The TURBO, or SCREW-SHELL, with bellied ſpires and elevated ribs, is an inch and a half in length, and the largeſt turn a little more than the third of an inch in diameter. The colour is white, and the mouth round and pretty large, with a thick lip. It is common on the ſhores of *Barbadoes*.

The CONICAL TURBO, or SCREW-SHELL, with plain ſtreaked and numerous ſpires, is by ſome called the TELESCOPE SHELL.

The SLENDER TURBO, or SCREW-SHELL, with ſpiral lines on the turns, is four or five inches long, and ſcarce half an inch thick where thickeſt. The colour of the ſhell is yellow, unleſs it has lain long on the ſhore. It is found on the ſhores of the *American* iſlands, as well as in the *Eaſt-Indies*.

The TURBO, or SCREW-SHELL, with diſtant and prominent ſpines, is about five inches long, and the diameter of the ſpire next the head, is about three quarters of an inch. The colour is whitiſh, with a tincture of yellow and red, and it is brought from the *Eaſt* and *Weſt-Indies*.

The WARTY TURBO, or SCREW-SHELL, with a broad depreſſed mouth, called by ſome the CATERPILLAR-SHELL, is about two inches and a half long, and near three quarters of an inch in diameter next the mouth. The ſhell in general is pale, variegated with a darker colour; but the protuberances are blueiſh. It is brought from *China*.

The TURBO, or SCREW-SHELL, with a long wide mouth, is three inches long, and of the thickneſs of a man's little finger. The colour is browniſh, variegated with a deeper brown, and a reddiſh tawny. The ſurface is ſmooth, only there are a few tubercles on the ſecond turn. It is brought from the *Eaſt-Indies*.

The OBLONG MOUTHED TURBO, or SCREW SHELL, with ſpires jagged at the edges, is about two inches long, and the third of an inch thick at the baſe. The colour is of a faint brown, a little variegated with tawny and reddiſh, and regular rows of little black dots. It is found in *America*, and ſome parts of *Europe*.

The

The THICK-EARED TURBO, or SCREW-SHELL, with turns deeply jagged at the edges, is three inches long, and an inch in diameter where thickeſt. The colour is a whitiſh pale, variegated with irregular ſpots of a darker hue, and the extremities of the ſpires are paler.

The SCREW-SHELL, of *Senegal*, is like a cone rounded at the baſe, and grows gradually ſmaller to the top, where it terminates in a very fine point. The largeſt are not much above an inch long, and a quarter of an inch in diameter. The ground colour is a dirty white; but on the upper middle of each turn, it is of the colour of agate.

There are other Screw ſhells mentioned by authors; but theſe may be ſufficient for our purpoſe.

CHAP. XXXII.

Of Wreathed Shells.

THE VOLUTA, or WREATHED SHELLS, are of one piece, and of a figure nearly conical, but ſhort, the clavicle being commonly depreſſed, and the mouth long, perpendicular, and narrow.

The JAMAR, is a Voluta of *Senegal*, which is very thick, and nearly of a conical ſhape. It is about ſix inches long, and two in diameter, and conſiſts of twelve ſpiral turns. The firſt makes of itſelf the chief bulk of the ſhell, and turns off at a right angle towards the lower part, to form almoſt an horizontal plain ſlightly hollowed in the middle. The remaining eleven are alſo flattiſh, and nearly horizontal. The mouth, or opening, is a long ſtraight cleft, larger by one half in the upper part than in the lower, whoſe length is terminated by the firſt turn, inſomuch that it is ſeven times longer than the clavicle. The right lip is acute and very ſharp at the edges; the left is ſwelled roundiſh and very ſimple. A membranous ſkin of a reddiſh colour ſurrounds the whole ſurface of the ſhell, and when this is taken off, it appears of a fine poliſh, and beautifully variegated

variegated with different colours. The ground is white, red, yellow, or brown, marbled with ſpots without any regularity, and ſometimes encircled with pointed ſtreaks. This ſhell is highly valued by the curious, who have given it different names, according to the varieties.

The ADMIRAL SHELL, or VOLUTA, with a broad yellow band, and a pointed line thereon, is an uncommon and very beautiful ſhell, bearing a great price. It is about two inches long, and near an inch in diameter towards the head, from whence, to the extremity of the mouth, it gradually decreaſes in ſize, ſo as to form a ſort of a cone, with an obtuſe point. The clavicle alſo diminiſhes in diameter, and terminates in a blunt point. The ground colour of the ſhell is of a beautiful yellow, but ſo variegated, that it does not take up above one third of the ſurface. There is a circle or ring of this colour at the head, of about the breadth of a ſtraw, and below it there are three broad belts or rings finely variegated. The loweſt of the three are broader than the others, and ſeparated by five yellow lines. Under the belts the fine yellow again makes its appearance in the form of a broad belt; and in the center there is a narrow pointed line of the ſame colours with the other variegations, which is the characteriſtick of this ſhell. From the verge of this, to the extremity of the ſhell, the yellow gold colour prevails again. It is brought from the *Eaſt-Indies*.

The VICE-ADMIRAL SHELL is nearly as beautiful as the former, and is ſomewhat more than two inches in length, and about an inch in diameter at the head. The clavicle is a little longer than that of the Admiral, and has about ten turns; the ground is of a bright gold colour, with the ſame variegations as the former, only they have a greater mixture of white. There is a line of gold colour at the head, of the breadth of a ſtraw, below which there is a circular line of the variegations, much of the ſame breadth. Under this there is a narrower line of yellow, and under that a very broad belt of the variegations. Below this there is another of yellow, as in the Admiral, but without the pointed line. Next to this there is another broad

belt of the variegations, and then comes the point of the ſhell, which is yellow. The clavicle is beautifully clouded with variegations. This is brought from the *Eaſt-Indies*, and likewiſe bears a great price.

The FALSE ADMIRAL SHELL is by ſome taken for the true one; but it is not near ſo valuable. It is about an inch and a half in length, and half an inch in diameter at the head. The body is conical, though it does not taper very much; and the clavicle is not quite ſo long in proportion as the two former. The ground colour is of a duſky white, variegated with ſeveral faint colours, and there are two broad belts of a beautiful yellow that run round it, the one being near the point, and the other a little higher than the middle. The ſurface is ſmooth, and the mouth narrow. It is brought from the *Eaſt-Indies*, but principally from *China*.

The TIGER SHELL is about two inches and a half long, and an inch and a quarter in diameter. Its mouth is very long and narrow, and its clavicle has about four turns. The ground of the ſhell is of a duſky red, ſprinkled all over with irregular ſpots a little whitiſh. Some of theſe are oblong, and others angular and indented. It is a ſcarce ſhell, and is brought only from the *Eaſt-Indies*.

The YELLOW TIGER SHELL, with ſmaller white ſpots, is about two inches and a half long, above an inch and half thick at the head, from whence it gradually diminiſhes to the opening of the mouth. The clavicle conſiſts of about ſix turns, and terminates in a fine point. The ground colour of the ſhell is yellow, and beautifully variegated with white irregular ſpots of the ſize of a pea. It is brought from the *Eaſt-Indies*.

The WHITE VOLUTA, variegated with a cloudy reddiſh colour, is about two inches long, and above an inch in diameter at the head. The clavicle is pretty large and blunt at the end, and has only four or five turns, and theſe not very diſtinct. The colour in general is of a faintiſh white, variegated with duſky red ſpots, that are very large, and of irregular figures diſpoſed without any order.

The

The CROWN IMPERIAL SHELL is three inches long, and near an inch and a half in diameter at the top. The clavicle is ſo depreſſed, that in a front view of the ſhell it is not to be ſeen. The head is ſurrounded with a very beautiful row of tubercles pointed at the ends, and the ground colour is pale, with two broad beautiful belts running round it, the one near the head, and the other towards the other extremity. They are of a fine yellow, prettily variegated with black and white. It is brought from the *Eaſt-Indies*, though few of them are quite perfect.

The HEBREW LETTER SHELL is ſmaller than the reſt of this kind; for it is rarely above an inch and a quarter in length, and three quarters of an inch in diameter at the top. The body is in the ſhape of a cone, and the clavicle pretty long, with about five turns, but it is blunt at the extremity. The ground colour is of a pearly white, variegated with large irregular black marks, diſpoſed in about four rows on the body, and there is a ſingle row on each turn of the clavicle. Some have fancied they reſemble *Hebrew* Letters. It is brought both from the *Eaſt* and *Weſt-Indies*.

The WHITISH VOLUTA, variegated with brown and purpliſh blue ſpots, is more than four inches long, and two in diameter at the head, from whence the body tapers very gradually, and is large and blunt at the end. The clavicle conſiſts of ſeven or eight turns, and is blunt at the extremity; the ground of the ſhell is white, variegated with ſpots of different ſizes running in circles round it; theſe circles are from twenty to thirty in number on the ſhell, ſome of which are brown, and others of a purpliſh blue. It is brought from the coaſt of *Guinea*.

The HALF CROWNED VOLUTA, with an undulated ſurface, is more like the Crown Imperial than any other ſhell of this kind. It is about two inches and a half in length, and near an inch and three quarters at the head. The edge of this is deeply indented, ſo as to form a kind of crown. The colour is white, and the variegations of a faint brown. It is brought from the coaſt of *Africa*.

The

The SLENDER VOLUTA, with a long clavicle, is about two inches long, and near three quarters of an inch in diameter at the head, from whence the body forms a ſort of cone tapering very regularly to a point: there are three white broad belts variegated with purple ſpots and lines, and between theſe there are three others that are broad and of a beautiful orange colour.

The BUTTERFLY SHELL is three inches long, and about an inch and three quarters in diameter near the head: the body is in the ſhape of a pretty regular cone, tapering very gradually, and ending in a blunt point: the clavicle has five or ſix turns, and is pointed at the extremity: the general colour is yellow, finely variegated with brown ſpots, placed in regular round rows: there are three very beautiful belts round the body, and one narrower near the head, conſiſting of large ſpots of a deeper and paler brown, with ſome white: they reſemble the ſpots, in the form of eyes, on the wings of ſome Butterflies.

CHAP. XXXIII.

Of Limpets.

A LIMPET is a ſimple ſhell of a conical or gibbous ſhape, with a very wide opening at the bottom. This ſhell-fiſh always fixes itſelf very firmly to ſome ſolid body, which ſerves as it were in the room of another ſhell. The top of the Limpet in ſome is acute, in others blunt; in ſome depreſſed, in others perforated; and in others again turned down or crooked.

The STREAKED LIMPET is an inch broad at the mouth, and three quarters of an inch high; but the baſe is not exactly round, and the top is ſharp or pointed: the colour of the outſide is of a duſky brown, with an olive-coloured caſt; and it has about ten ridges placed nearly at equal diſtances, being rough all over: theſe ſtreaks are moſt conſpicuous towards the mouth; for they become fainter as they approach to the top,

where they diſappear, the ſharp point being ſmooth: the inſide of the ſhell is variegated with yellow, brown, and whitiſh colour, and diſpoſed in irregular circles.

The STARRY LIMPET, with ſeven ribs that form as many prickles at the rim, is of an oval ſhape, being about an inch one way, and two thirds of an inch the other; but not raiſed very high, it being ſcarcely half an inch that way. It is pointed at the top, but not exactly in the center of the ſhell; and on the outer ſurface there are ſeven very high ribs placed at a conſiderable and nearly equal diſtance from each other: they run diſtinctly to the very point of the top, and to the edge, where they terminate in a point beyond it, forming ſo many prickly rays, with furrows between them, in the form of ſegments of circles: the colour is whitiſh on the outſide, variegated with black clouds and ſpots, eſpecially about the ribs. This, as well as the former, is found adhering to the rocks in the *Eaſt-Indies*.

The OVAL SMOOTH LIMPET, with a depreſſed top, is two inches and a half one way, and two inches the other. Its height from the center of the baſe to the top, which is ſomewhat depreſſed, is an inch and a quarter, the rim is even, and the whole ſurface ſmooth: the colour is of a duſky white, finely variegated with black clouds. It is found ſticking to the rocks on the ſhores of the ſouthern parts of *Europe*.

The GREAT OBLONG LIMPET is near three inches long at the baſe, and an inch and a half in diameter at the largeſt end: the edge is ſmooth and even, and the height is about an inch; the ſurface is almoſt ſmooth, only there are ſeveral longitudinal rays, and ſome tranſverſe or circular. Its colour is of a duſky brown, and the ſhell is more thick and ſtrong than that of many others: the colour on the outſide is of a duſky grey, and the inſide is whitiſh. It is met with in the *Eaſt-Indies*, and ſouthern parts of *Europe*.

There are many other ſorts of Limpets; but the preceding deſcriptions may be ſufficient to diſtinguiſh them from all other ſhells.

CHAP. XXXIV.

Of Shells, called the Sea Ears.

THE HALIOTIS, or EAR SHELL, is a ſimple ſhell of a depreſſed ſhape, with a large mouth, having ſomewhat of a ſpiral form at the top. Some have ſuppoſed it to be of the ſhape of an ear, from whence it has its name.

The GREAT EAR SHELL, with an even edge and ſeven holes, is five inches long, and nearly three broad; but it is no more than three quarters of an inch high: the ſhape is of an irregular oval, and the end where the ſpiral turn is placed is the largeſt: the back or hinder edge is thick, and ſo turned as to form a ſort of lip: the fore edge is thin, ſimple, and even, and the upper ſurface is brown, rough, and uneven, with a kind of undulated line: the part towards the head is thickeſt, and the ſpiral turn ſhort and depreſſed. Along the back part of the ſhell, near the thicker edge, there is a row of holes of a roundiſh ſhape, of which ſeven are open, and there are the marks of others, that do not penetrate quite through the ſhell: the inſide of the ſhell is of a beautiful pearl colour, which ſeems to be variegated with ſeveral bright colours when placed in different directions of the light: there is alſo a kind of watery protuberances, which look like pearls. It is met with chiefly in the *Eaſt-Indies*.

The LONG EAR SHELL, with an undulated head and eight holes, is three inches long, and an inch and a quarter broad, where broadeſt; but it is not half an inch high: the head is large, and the ſpiral turn very beautiful and fair: the back of the ſhell forms an even lip, and the fore edge is thin and undulated: the outſide is ſmooth, only it is a little undulated from the ſpiral turn, and is of a greeniſh colour, variegated with a browniſh red: the inſide of the ſhell is of a pearl colour, finely variegated with others: there is a long row of holes on the back edge of the ſhell, eight of which are always open. It is found ſticking on the rocks of the *Malabar* coaſt in the *Eaſt-Indies*.

The STREAKED or WRINKLED EAR SHELL, with ſix holes, is three inches and a half long, and two in diameter near the head; but it is not above three quarters of an inch high: the outſide of the ſhell is of a duſky brown, and on it are many ſlight irregular undulated ridges, which begin near the ſpiral end, though they almoſt diſappear before they reach it.

CHAP. XXXV.

Of Dentalia, or Tooth-Shells.

THE STREAKED and RINGED TOOTH-SHELL, of a ſhape approaching to a cylinder, is two inches long, and of the thickneſs of a ſwan's quill. This ſhell looks as if it was broken off from ſome other, and is of a greyiſh white, generally variegated with green, and ſometimes tinctured with red. It has about ten deep longitudinal furrows, running all the way down its ſurface, and the ridges between them are rounded: there are generally three circles or rings paſſing round it at unequal diſtances, ſomewhat interrupting the longitudinal furrows. This ſhell is thin, and is eaſily broken. It is common on the ſhores of *Italy*.

The DOG TOOTH-SHELL is about an inch in length, and of the thickneſs of a gooſe quill: the ſhape is conical, and largeſt at the mouth, from whence it gradually tapers to a point, which is ſharp and without any opening: the ſurface is ſmooth and poliſhed, and the colour is white. It has ſometimes a purpliſh caſt, and ſometimes that of a bright red or brown. It is common in moſt parts of the world.

The CONICAL, CROOKED, STREAKED, and RINGED TOOTH SHELL, is four inches long, and of the thickneſs of a child's finger. It is largeſt at the mouth, and from thence gradually tapers to a ſharp point. It is a little crooked, and the ſurface is furrowed with eight deep longitudinal lines placed in pairs with a vacant ſpace between them. The ridges are rounded,

and

and there are two broad annular marks ſurrounding the ſhell towards the baſe, and another much narrower towards the point. The colour is of a duſky grey, and the ſurface is not poliſhed. It is found on the ſhores of *Italy* and other places.

The GREAT SEA PIPE, open at each end, is ſix or ſeven inches long, and three quarters of an inch in diameter near the mouth, which has a kind of irregular lip an inch and a half broad: and the ſhell grows gradually ſmaller at the other end, where it is of the thickneſs of a Gooſe-quill. The whole ſurface is of a duſky brown, and there are about twelve annular ridges upon it, but they are not much raiſed above the ſurface. It is common in the *German* ocean, where the waves throw it on the ſhores; but it is ſeldom whole, being thin, brittle, and eaſily broken.

CHAP. XXXVI.

Of Cylindric Shells.

THE BROCADE SHELL, is large and beautiful, being three inches and a half in length, and near two and a quarter in diameter. The circumference is much the ſame throughout the whole ſhell, only it is a little ſmaller at each extremity. The head is denticulated, or crowned as ſome call it, and the clavicle has four or five turns terminating in a point. The colour is as white as ſilver, and is beautifully variegated with a bright brown in fine irregular lines, clouds, and ſpaces. It is finely poliſhed, and the whole has the appearance of brocade. It is brought from *Africa* and *America*.

The TULIP CYLINDER SHELL is about three inches long and two in diameter, though the ſhape is not ſo regular as that of the former; but it is largeſt a little below the head, from whence it grows gradually ſmaller to the other end. The clavicle has ten or twelve turns, and terminates in a blunt point. The colour is white, variegated with clouds and ſpots of blue

and brown. It is very ſcarce, and is brought from the *Eaſt-Indies*; but ſeldom in perfection.

The PORPHYRY SHELL is about two inches and a half long, and an inch and quarter in diameter. The ſhape is nearly like that of a cylinder, with a ſhort blunt clavicle. The colour is of a pale white, with a reddiſh caſt, clouded with a deeper red approaching to purple, which takes up much the greater ſurface. This colour appears in moſt places in irregular longitudinal and dentated lines. It is brought from *South America.*

The SLENDER WHITISH SYLINDER SHELL, variegated with brown, is three inches and a half long, and near an inch and quarter in diameter. It is ſhaped nearly like a cylinder, only it is ſomewhat ſmaller towards the point than elſewhere. The clavicle has four or five turns, and the body of the ſhell is cloven at the other extremity, by the continuation of the mouth. The colour is white, with a broad belt near each end, variegated in ſuch a manner that ſome have imagined there are letters thereon. It is brought from the *Eaſt-Indies* and *South America.*

The SLENDER SYLINDER SHELL, variegated with brown and white, is three inches long, and about an inch and quarter in diameter. Its ſhape is nearly like that of a cylinder, only it is a very little ſmaller at both ends than in the middle. The clavicle is blunt, though it has four or five turns, and the whole ſhell is variegated with a bright white, and a pale tawny brown. They are diſpoſed in denticulated lines, and the ſurface appears to be finely poliſhed, it being very bright. It is brought from *South America.*

CHAP. XXXVII.

Of Dolia, or Pipe Shells.

PIPE SHELLS are ſo called, from being imagined by ſome to be like the pipes or caſks made to hold wine. However their ſhapes differ ſo much, that

that it may be doubted, whether this appellation is proper.

The OVAL PIPE SHELL, with ſpiral ribs, is about two inches and a half long, and nearly as much in diameter in the largeſt part. The clavicle is longiſh, and pointed at the end; but it is continued in ſuch a manner from the body of the ſhell, that it is hard to ſay where it begins. The other extremity is formed like a ſhort ſnout or bill, which turns a little up. This ſhell has a large belly, which is greateſt near the head, and all its ſurface is covered with many ribs of the breadth of a ſtraw, ſeparated by furrows of the ſame breadth. The ribs are yellowiſh, and the ſpaces between them of a whitiſh yellow, only they are ſprinkled irregularly with a deeper yellow, that is, both the ribs and furrows. It is brought from the *Eaſt-Indies* and *America*.

The PARTRIDGE SHELL is about two inches and a half long, and near two in diameter. It is a thin ſhell with a pretty long clavicle that has four turns, the lowermoſt of which is ſeparated from the body of the ſhell by a furrow. The other end terminates without a bill or beak, and the mouth is large and reddiſh within. The external ſurface is perfectly ſmooth and of a brown colour, variegated with a deeper brown and grey, ſomewhat reſembling the plumage of a Partridge, whence it has its name. It is brought from the *Eaſt-Indies* and the *American* iſlands.

The HARP SHELL is about two inches and a half long, and a little more than an inch and a half in diameter; the body however is bellied in ſuch a manner as to render it like others of this kind. The clavicle has five turns, and that next to the body of the ſhell is large, but the others are ſmall and pointed at the top. All the ſurface of the body of the ſhell is furniſhed with large ribs, which ſtand at ſuch diſtances as make the ſpaces between them equal to twice or thrice their own diameters. The colour is of a deep brown, variegated with a paler ſort and white in a very beautiful manner. It is brought both from the *Eaſt* and *Weſt Indies*.

The ÆTHIOPIAN CROWN SHELL is about three inches long, and two in diameter. The ſhape is

oblong, and ſomewhat oval, being ſmaller at each end than in the middle. The mouth is long and wide, and cleaves the extremity of the ſhell a little way. The clavicle is ſhort and blunt at the end, and has four turns; that next the body, as well as the upper edge of the body, are deeply dentated, or as ſome ſay crowned, and the teeth are formed into regular even conical points. The ſurface is pretty ſmooth, only there are impreſſions of longitudinal lines; and the colour is of a pale browniſh yellow. It is brought from *Africa* and the *Eaſt-Indies*. There are ſome other ſorts of this ſhell, which, for the ſake of brevity, we ſhall omit.

CHAP. XXXVIII.

Of Porcelain Shells.

THE PORCELAIN is a ſimple ſhell, conſiſting of one piece gibbous on the back; the mouth is long, narrow, and dentated on each ſide.

The WHITE PORCELAIN SHELL, yellow within and beaked at each end, is of an oblong ſhape and very gibbous. The length, including the beaks, is about three inches, and its diameter in the middle nearly two. It is white on the outſide, and yellow within; and the mouth is large, having a ſort of a ſnout or beak at each end. It is brought from *Africa* and the *Eaſt-Indies*.

The ARGUS SHELL is about three inches long, two in diameter, and ſomewhat leſs in height, though it is gibbous like the former. The mouth is wide, and the lips are continued at each extremity in the form of a broad, ſhort beak each way. The general colour is yellowiſh, only there are three brown bands of a conſiderable breadth running over it; the whole ſurface is adorned with a multitude of round ſpots like eyes, from whence it has its name. It is brought from *Africa* and the *Eaſt-Indies*.

The MAP SHELL is about two inches and a half long, and nearly as much in diameter, with a gibbous back. At the head there is a ſhort clavicle, placed a little

little above the extremity of the mouth, conſiſting of about four imperfect turns. The other end of the ſhell is blunt, and the general colour brown, only there are irregular undulated lines of white thereon, which with ſpots, and clouded marks of the ſame colour, give it the appearance of a Map. The mouth is dentated, and near it the ſhell is paler than elſewhere. It is brought from *Africa* and the *Eaſt-Indies*.

The BLUISH BANDED PORCELAIN SHELL, with a clavicle at one end, and a beak at the other, is about two inches long, and nearly an inch and a half in diameter. The general colour is bluiſh, only there are two or three greyiſh brown bands. It is brought from *Africa* and *America*.

The OVAL PORCELAIN SHELL, with a long beak at each end, is about three quarters of an inch in length, and half an inch in diameter, with a remarkable gibbous back. The colour is white, and its ſurface ſmooth and ſhining. It is brought from *Africa* and the *Eaſt-Indies*.

The WHITE PORCELAIN SHELL, variegated with brown, and beaked at each end, is three quarters of an inch long, and about half an inch in diameter. The colour is a fine white, variegated with bright brown, and diſpoſed in crooked and irregular angular lines. It is brought from the *American* iſlands.

The SMALL POX PORCELAIN is not above three quarters of an inch long, and half an inch in diameter. All the ſurface is covered with beautiful round ſtuds of a fine white colour, not unlike pearls. It is brought from *Africa*.

The BEETLE PORCELAIN SHELL is about an inch long, and two thirds of an inch in diameter. The colour is white, only on the back there is a large irregular brown ſpot, which ſome fancy to be like a Beetle. It is brought from the coaſt of *Guinea*. There are many other ſhells of this kind, as well as of the reſt; but what has been ſaid is ſufficient to give a general knowledge of them.

CHAP. XXXIX.

Of Bivalved Shells.

OF theſe there are ſix kinds, namely, OYSTERS, BASTARD COCKLES, MUSCLES, HEART-SHELLS, among which COMMON COCKLES are included, SCOLLOPS, and RAZOR SHELLS.

OYSTERS have two valves or ſhells, one of which is hollowed on the inſide, and gibbous without, and the other is more flat; but they both conſiſt of ſeveral plates, and the outſide of each ſhell is generally rough; but the gibbous more than the other *.

The HAMMER OYSTER has one of the moſt extraordinary ſhells in the world, it being in ſhape like a Hammer, or rather like a Pick-ax, with a very ſhort handle and a long head. The body of the ſhell, which is taken for the handle, is about four inches long, and three quarters of an inch broad; but the head is five or ſix inches long, and except where it joins to the body, is little more than half an inch broad. It is of an irregular form, uneven at the edges, and terminates in a narrow blunt point at each end. The hinge or joint is at the lower end of the body; and the ſhells open all the way from each end to this part, and yet they ſhut very cloſe. The edges of the body and head have often great irregularities and protuberances on the ſurfaces,

* Oyſters uſually caſt their ſpawn or ſpat in *May*, which at firſt appears like a drop of candle-greaſe, and ſticks to any hard ſubſtance it falls upon. It is covered with a ſhell in two or three days time, and in three years they are large enough to be brought to the market. Theſe Oyſters they term *Natives*, and they are incapable of moving from the places where they firſt fall; for which reaſon the dredgers make uſe of nets, which are faſtened to a ſtrong broad iron hook, with a ſharp edge, which they drag along the bottom of the ſea, and ſo force the Oyſters into the nets. When they are thus taken, they are carried to different places, where they are laid in beds or rills of ſalt water, in order to fat them. When the ſpawn happens to ſtick to the rocks, they generally grow to a very large ſize, and are called *Rock Oyſters*. Between the tropicks there are millions of them ſeen, ſticking at the roots of a ſort of trees they call Mangroves, at low water.

ſurfaces, being deeply furrowed in all directions. The colour is of a deep brown, with a tincture of violet purple on the outſide; but within it is of a pearly white, with a faint purpliſh caſt. It is found in the *Eaſt-Indies*, but as it is very ſcarce it ſells for a great price, ſix guineas having been given for one that was imperfect.

The great PRICKLY OYSTER is nearly of an oval form, being four inches long, and three broad at the larger extremity; but at the ſmaller where the joint is, it is about an inch and a half. Both ſhells are gibbous on one ſide and hollow on the other, but the under one moſt. The ſurface of each is furrowed long-ways, but ſomewhat irregularly, and is covered with a vaſt number of ſpines or prickles, which are ſtrong, ſharp-pointed, and from a tenth of an inch to half an inch long. Some of theſe are ſtraight, others crooked, and the colour on the outſide of the ſhell is of a dirty red, but on the inſide white and pearly. It is found on the coaſts of *Africa*.

The CONICAL OYSTER, with undulated ſpines at the rim, is two inches long, and an inch and a quarter broad at the larger extremity, from whence it gradually becomes ſmaller to the other, where the hinge or joint is placed. The body of the ſhell is rough and undulated, and there are a few ſhort ſpines or prickles at the edges. There are three or four rows of them near the rim of the larger extremity, which are ſharp pointed and not ſtraight, but undulated or bent backwards and forwards, making a thick ſort of fringe: thoſe of the upper and lower ſhell meet and hide the place where the ſhells ſhut together. The body of the ſhell is of a dirty white; but the prickles are of an elegant purpliſh red, making a fine appearance. It is common on the ſhores of *South America*.

The HEDGE-HOG OYSTER is about an inch long, and the ſame broad and deep: the ſhells are both gibbous, and ſo ſhaped, that the upper one being ſmaller than the under, they never ſhut cloſe: the whole ſhell is furrowed long-ways, and very thick ſet with ſhort crooked prickles, the points of which

turn towards the joint: the colour is white. It is a native of the *Eaſt-Indies*.

The PEARL OYSTER has a large, ſtrong, whitiſh ſhell, wrinkled, and rough without, but not ſtreaked, and within ſmooth and of a ſilver colour. Theſe ſhells are commonly called *the Mother of Pearl*, on account of their breeding Pearls. However, the ſhells are of different ſizes, ſome being four times as large as thoſe of our Rock Oyſters. There are a great number of Pearl fiſheries in *Aſia* and *America*. One of the moſt famous is in the *Perſian* Gulf, near the iſle of *Bahren*, and another between the coaſt of *Madura* and the iſle of *Ceylon*. Beſides theſe, there are five in the gulf of *Mexico*, near the *American* coaſt. There have Pearls alſo been found in ſome rivers, particularly in *Scotland* and *Bavaria*; but they are not near ſo valuable as thoſe in other parts.

Pearls are not all of the ſame colour; for ſome are white, others yellowiſh, and others again of a lead colour; and ſome affirm they have been found as black as jet, particularly in *America*. However, the Oriental Pearls are the beſt, being the largeſt and moſt perfectly round and ſhining.

They fiſh for Pearls, or rather the Oyſters that contain them, in boats twenty-eight feet long; and of theſe there are ſometimes three or four hundred at a time, with each ſeven or eight ſtones, which ſerve inſtead of anchors. There are from five to eight divers belonging to each, who dive one after the other: they are quite naked, and have each a net hanging down from the neck, and gloves on their hands, wherewith they pick the oyſters from the rocks. Each of theſe has alſo a ſtone a foot in length, and weighing fifty pounds, to make him dive the ſwifter: this ſtone has a hole at the top, by which it is faſtened to a rope; and, when they are going to dive, they place one foot in a kind of ſtirrup, laying hold of the rope with their left hand, and the other end is faſtened to the boat. They ſtop their noſes with their right hands, to hold in their breaths, and ſo they go to the bottom, where they are no ſooner come, but they give a ſignal, by pulling the rope, for thoſe that are in the boat to draw

up

up the ſtone. This done, they go to work, filling their nets as faſt as they can, and then pull the rope again, when thoſe in the boat draw up the nets firſt, and immediately after the divers. They dive to the depth of fifteen fathoms, but not deeper.

Theſe boats near the iſle of *Ceylon* generally go every morning by break of day with the land winds, and return in the afternoon with the ſea winds: the owners of the boats hire both the divers and the reſt of the boat's crew, as we do our labourers, at ſo much a day. All the Oyſters are brought on ſhore, where they are laid in a great heap till the Pearl fiſhery is over, which continues all *November* and *December*. Every Oyſter does not contain a Pearl, though there are ſome that have from five to eight. The natives ſtew and eat the fleſh of theſe Oyſters; but they are not near ſo good as the *Engliſh*, they being more hard, and ſomewhat rank. There are ſeveral other ſorts of Oyſters; but theſe are the moſt remarkable.

The BASTARD COCKLE is a two-valved ſhell, each of which are convex or gibbous, and of an equal bigneſs; but that which diſtinguiſhes it from other ſhells is the opening that remains when the valves are ſhut.

The TRUNCATED BASTARD COCKLE is about an inch in diameter each way: the head is rounded and ſmall, and truncated at one extremity. All the ſurface is furrowed with deep lines, and a few broad ridges between them; the truncated end has two whitiſh wrinkled lips, which leave a ſmall, long opening between them, and the edges of the ſhells are dentated or ſerrated on the rim: the general colour is a dull white, beautifully variegated with a gloſſy brown. It is brought both from the *Eaſt* and *Weſt-Indies*.

There are other ſpecies of the Cockle; but they do not ſeem to merit a particular deſcription.

The ARABIAN SHELL is three inches in diameter where largeſt, and two and a half from the joint to the oppoſite rim: the head, where the joint is placed, is not in the center of the top, but near one ſide, and the whole ſurface of the ſhell is perfectly ſmooth and even, having a fine natural poliſh: the colour is a pale

pale brown, variegated with lines and ſtreaks of black, which are narrow, angular, and run croſs each other in an irregular manner, inſomuch that they have ſome reſemblance to the *Arabick* letters, whence this ſhell has its name. It is common on the coaſts of ſome parts of *Europe*.

The VENUS SHELL, or CONCHA VENERIS, is about an inch and a half in length, and as much in diameter towards the larger end: the valves are both convex, and are deeply ſtreaked long-ways: the joint is placed at the extremity, where the ſhell is rounded and prominent; the end, that ſhould have gone the other way, ſeems to be cut off, and the opening is covered with a very elegant lip, proceeding from each ſide. It is wrinkled, and of a beautiful reddiſh colour, with ſome white among it: the lips do not join perfectly in the middle, but leave a long aperture, and at the further edge of each there is a row of long, ſlender, beautiful ſpines. It is brought from the *American* iſlands, and is ſeldom perfect; but when entire it is of a great value.

The ORIENTAL CONCHA VENERIS is not ſo beautiful as the former. It is two inches and a half in diameter each way, and the head near the joint is ſmall and rounded: the truncated part has two lips, which meet near the top, and leave only a ſmall opening under the hinge, except lower down, where it gapes again: the ſurface of the ſhell has eight or ten obſcure bands, and the lips are ſmooth at the edge. It is common on the ſhores of the *Eaſt-Indies*.

CHAP. XL.

Of Muſcles.

THESE are compoſed of two valves or ſhells, of a longiſh ſhape, that ſhut all the way, and are both convex. They are not liable to be carried along by the motion of the water, like many other ſhell-fiſh; for they are capable of forming ſeveral ſtrings, of the

the thickneſs of hairs, about three inches long, and ſometimes to the number of two hundred and fifty: with theſe they lay hold of any thing that is near them. With regard to the fineneſs and number of the threads, they are as fine as ſilk, and made uſe of for the ſame purpoſes at *Palermo* in *Sicily*; for there they make various kinds of ſtuffs and other curioſities of theſe threads. The inſtrument that the muſcle employs in producing theſe threads is what we commonly call the tongue, in the midſt of which there is a narrow channel, which ſerves as a ſort of mold for their firſt formation. Our ſea and river Muſcles are too well known to need any deſcription.

The CAROLINA MUSCLE is four or five inches long, and an inch and a half broad: the ſide where the joint and head are placed is pretty blunt, though that oppoſite to it is more pointed; but it ſhould be obſerved, this joint is placed at one end of the Muſcle. The ſhells ſhut very cloſe, and are deep, their middle being raiſed into an irregular angular gibboſity: the colour is yellow, with a ſmall tincture of purple in ſome places; but the inſide is of a pearl colour, with a purple caſt near the edges. It is brought from *Carolina*, as well as *South America*.

The Muſcle called ADER is a very curious ſhell, of a fine ſky-blue colour, with yellow rays one over another towards the bottom. It is very ſmall, being never above a quarter of an inch in length, and three-twelfths broad. It is pointed at the top, and has ſlight folds near the hinge, where there is a ſmall cavity. Each valve has about fifty deep furrows, which run longways from the top to the oppoſite extremity, and the edges are all round with ſmall teeth, the ſame in number as the furrows. When the ſkin is taken off, it appears to be of a ſhining violet colour: the ſhell on the inſide is generally white, though ſometimes of a dark violet.

The ANPAN has a bivalved ſhell, and is one of the largeſt that is met with at *Senegal*; for it is ſeven inches long, and four inches and three quarters broad. It is ſo flat, that the breadth is twice as much as the thickneſs. The ſhell is very thin, and as brittle as glaſs;

glaſs; but appears like horn, it being of the ſame colour, and as tranſparent. It is poliſhed, and ſhines on the inſide; but without, towards the extremity, there are a great number of crooked very ſmall cylindric pipes, of the ſame nature as the ſhell: theſe pipes owe their original to the wrinkles of the animal, which are like others of this kind, only its mantle has about thirty large furrows, inſtead of threads. The ligament, that joins the two valves, reaches from the top to three quarters of the length towards the upper extremity; but the joint or hinge has no tooth *.

The PINNA MARINA is the largeſt of this kind, ſome of them being two feet long, and near one broad. Neither of the ſhells is very deep; it is ſmall and narrow at the head, from whence it grows gradually larger for two thirds of the length; but from thence to the extremity, though it ſtill grows larger, it becomes of a roundiſh ſhape, terminating in an oval: the colour on the outſide is of an olive brown; but within it is partly of a pearl colour, and partly reddiſh: the outward ſurface is rough, in ſeveral places, with a kind of ſcales, and there are furrows that run from near the top to the bottom. It is brought from the *Eaſt-Indies* as well as the *Mediterranean* ſea.

The PRICKLY PINNA is ſix or ſeven inches long, and three broad at the baſe, from whence it becomes gradually ſmaller to the oppoſite end. It is not ſo round at the end as the laſt ſort, though it bellies out a little: the colour is of a pale olive on the outſide, and of a pearly white within; the outward ſurface has deep furrows running long-ways, at ſome diſtance from each other, and the raiſed parts between them are conſequently broad. It is furniſhed with a ſort of ſcales, many of which terminate in prickly points.

* The negroes fiſh for this Muſcle about the capes of *Bernard* and *Daker*, where they meet with large quantities at the depth of three fathoms. The fleſh is exceeding good, eſpecially when it is boiled, and dreſſed properly, and is in great eſteem with the *Europeans*.

CHAP. XLI.

Of the Heart-Shells and Cockles.

THESE conſiſt of two valves or ſhells, which are equal and gibbous; but they have no ears or appendages near the head. As for the common Cockle, it is ſo generally known, that it needs no deſcription.

The thin white HEART SHELL, with ten ribs, has roundiſh and very deep valves, being three inches in length from the joint to the oppoſite rim, and about as much broad: the head next the hinge is prominent and blunt, and is nearly of the ſame ſhape as a heart on cards: there are ten ridges or ribs, that run along each ſhell from the head to the rim, which are very high and of a triangular ſhape, being edged at the top, and continued with denticulations beyond the rim of the ſhell. It is of a fine white colour, and appears tranſparent when held up to the light. They are brought from the *Eaſt-Indies* as well as *South America*.

The deeply-furrowed and ſpinous HEART-SHELL is three inches and a half long, and much the ſame broad: the ſhells are ſo hollow, that the thickneſs when cloſed is not much leſs than its length; and the head is rounded and large, with beaks that meet in ſuch a manner over the joint, as to give it the appearance of a heart. The colour is of a greyiſh white, and there are furrows on its ſurface that run long-ways, at ſome diſtance from each other: the ridges between them are rounded; but the back of the ſhell is ſometimes ſmooth, and towards the end, and at the edges there are long, ſharp, ſtrong prickles; ſome of which are ſtraight, and others crooked. It is brought from the *American* Iſlands.

There are ſeveral other kinds of Heart-Shells, peculiar to *Africa*, *America*, and the *Eaſt-Indies*.

CHAP. XLII.

Of Scollop Shells.

THESE ſhells have two valves, that ſhut cloſe all round, and are uſually pretty flat with ears, for ſo the two proceſſes are called, that proceed from the head of the ſhell near the joint.

The ribbed and variegated SCOLLOP, with large equal ears, is about two inches and a half in length, and two and a quarter in breadth. The ſhells are pretty flat and rounded, and ſinuous on the edge, from whence they become ſmaller to the head, and terminate in an oblong point. On each ſide there is an ear, which joins to the edge of the head, and runs down a third of an inch farther on the ſhell; they unite at the top, where they riſe a little above the level of the head, and the ſurface of the ſhells is adorned with ribs; there are twelve on each, broad and rounded at the top, having furrows between them about half their own breadth. The ears are alſo furrowed and ribbed, and the general colour is white, finely variegated with large ſpots of brown. It is very common in *England*.

The red ribbed and furrowed SCOLLOP, with unequal ears, is four inches long and about as much broad, and is of a roundiſh ſhape. The colour is of a deep red, with a mixture of purpliſh brown, and large and regular ribs on the ſurface, which are broad, depreſſed, and furrowed, and have ſeveral undulated tubercles thereon, and ſome that are more regular. The ears are large, but one of them is conſiderably bigger than the other. It is brought from the *Mediterranean*.

The DUCAL MANTLE SHELL is three inches long, and nearly as much broad, with a regular ſinuous edge. The head is furniſhed with two large beautiful ears nearly of the ſame ſize, and the ſurface is adorned with about thirteen ribs, that are broad and ſomewhat elevated in the middle. The general colour is a deep fine red, and the edges are orange; but the ſurface is every where variegated with yellow and white. The head

head is ſomewhat paler than the other parts, and the ears are beautifully variegated. It is met with on the *European* ſhores, but is not very common.

The IRISH SCOLLOP is about two inches long, and almoſt as much broad, having on its ſurface about fifteen ribs, that are broad, depreſſed, and nearly at equal diſtances from each other. The ſhells are very little raiſed; but the ears are moderately large, and one is a little bigger than the other. The general colour is reddiſh, which changes gradually from the deepeſt purple to the paleſt fleſh-colour; but in ſome it is every where the ſame, and in others it is beautifully variegated with irregular ſpots of white. It is very common on the *Iriſh* coaſts.

CHAP. XLIII.

Of the Finger Shell Fiſh.

THE thick red FINGER SHELL is about three inches long, and of the thickneſs of a man's finger. The ſurface is ſmooth, except towards one end, where there are a few crooked lines or rather furrows; the ſhell is pretty thick for one of this kind; but at the end where the plates are entire, it is thicker than the other. It is open at both the extremities, and the colour is of a fine pale red, variegated from the ſtrongeſt damaſk roſe colour to the fainteſt carnation. It is brought from the *Eaſt-Indies*.

The crooked FINGER SHELL, variegated with brown and blue, is ſix inches long, and three quarters of an inch broad. It is of an equal thickneſs from one end to the other, and is bent in the manner of a bow. The ſurface is ſmooth and gloſſy; but there are the extremities of many broken or imperfect plates ſeen thereon, ſo that it is never quite uniform. It is variegated with brown and violet blue; but the inſide is of a pearly white.

The ſlender, ſtraight, brown and white FINGER SHELL, is three inches long, and near a third of an inch

inch in diameter. It is perfectly ſtraight and open at both ends; but the ſurface is ſomewhat irregular, as in the former, though very gloſſy. The general colour is of an olive brown, variegated with white in ſome places, but the inner ſurface is of a pearly white. It is brought from the *Eaſt-Indies*.

The violet purple FINGER SHELL is four inches long, and near half an inch in diameter, being quite open at both ends. The ſhell is no thicker than ſtrong paper, and is very brittle. The ſurface is irregular from the broken plates that appear thereon; and the colour is of a fine blueiſh purple, and nearly like that of a violet, but ſomewhat redder. It is brought from the gulf of *Perſia*, and the *Eaſt-Indies*.

CHAP. XLIV.

Of the Acorn Shell Fiſh.

THESE ſort of ſhells are of a longiſh ſhape, nearly approaching that of an acorn, and are compoſed of ſeveral valves from ſix to twelve in number; but they are not moveable; for they are fixed to each other by an intermediate ſubſtance.

The great furrowed ACORN SHELL, with a large mouth, is the biggeſt of this kind, it being about an inch and a half in height, and above an inch in diameter where largeſt. It is broad at the baſe; and firmly fixed to a ſolid ſubſtance, and it is nearly of the ſame diameter at the top as at the baſe, where it is wide open. The mouth is not exactly round, nor the edges even; it is compoſed of twelve valves that touch each other at the baſe, but recede from each other at the top. Theſe valves are furrowed lengthways, and are of a browniſh red; but the intermediate ſubſtance is of a lighter colour, and irregularly undulated in a tranſverſe direction. The inner ſurface is whitiſh, with a mixture of carnation and blue. The animal contained in this ſhell is of a triangular ſhape at the head, and there are four pieces that belong to it, which ſerve to cloſe up the opening.

opening. It is found ſticking to the rocks in the *Eaſt* and *Weſt-Indies*.

The bell-faſhioned ACORN SHELL, with a large mouth, is uſually found in great cluſters, fixed to each other at the tops, which makes the ſurface of the whole appear like net-work, but there are large cavities underneath between their bodies. The ſhell is narroweſt at the baſe, where it is fixed to a ſolid body, and from thence becomes gradually wider to the top, where it is broad, open, and bent a little down at the edge, ſo as to appear ſomewhat like the ſhape of a bell. It is compoſed of eight firm, hard portions of a conical ſhape, connected by a firm, ſhelly ſubſtance. The colour is of a browniſh grey, and the intermediate matter of a deeper brown. They are brought from the *American* iſlands.

The greyiſh-white furrowed ſlender ACORN SHELL is ſeldom more than a third of an inch long, and is two thirds leſs in its diameter. It is broadeſt at the baſe, and narroweſt at the top, where there is a ſmall mouth. The colour is of a greyiſh white, and the ſhell exceeding thin. It is compoſed of ſix portions, which are broadeſt at the baſe and ſmalleſt at the top. The furrows run long-ways, and are moſt diſtinct near the top. The intermediate matter is tranſverſely and irregularly undulated. It is common on the *Engliſh* ſhores.

CHAP. XLV.

Of Thumb-footed Shell-Fiſh.

THE BLUISH-GREY THUMB-FOOT, with a pedicle longer than the body, is a third of an inch in diameter at the top, and near a quarter at the baſe. It is tolerably firm and fleſhy, and is covered with a tough thick ſkin, with irregular tranſverſe furrows on the ſurface. Above this is the ſhelly covering, which is about half an inch long, and of a pyramidal figure; the diameter at the baſe is equal to the top of the pedicle or foot, and it terminates in a pretty ſharp

point. The ſhell is compoſed of an uncertain number of portions, of which the middle ones are the largeſt, and the reſt ſurround them at their baſes. The pedicle is of a browniſh colour, and the ſhelly part of a mixture of blueiſh-grey and white. It is found in ſeveral parts, and the fleſh when boiled becomes red.

The REDDISH THUMB-FOOT is about two inches in length, and the pedicle or foot is more than an inch and a half; but the ſhelly part is only the third of an inch. Its ſurface is deeply wrinkled, and its colour is of a pale whitiſh red. The ſubſtance is fleſhy, but leſs firm than that of the former kind. It is found on the coaſts of the north of *England*.

The WHITE THUMB-FOOT is three quarters of an inch in length where largeſt, which is at the head of the foot, and is about half an inch in diameter. The body is of a pyramidal form, and ſomewhat longer than the pedicle. It is compoſed of a great number of longiſh pyramidal portions of a whitiſh colour, and the pedicle is white. It is found on the northern coaſts of *England*.

There are other kinds of the Thumb-Foot; but theſe already mentioned are ſufficient to diſtinguiſh them from all other ſhells.

CHAP. XLVI.

Of the Pholades, or File Shell Fiſh.

THE PHOLAS is a ſhell-fiſh, whoſe ſhell is made up of five pieces, but, ſo as to have the appearance of a muſcle. Two of theſe are large, and exactly reſemble the bivalved kind, or thoſe that have two ſhells; beſides which, there are three other portions or valves that are very ſmall, and ſerve to cloſe up an opening left by the irregular meeting of the two principal ſhells. They inhabit holes made in rocks and other ſolid bodies, and ſometimes they are met with at the bottoms of ſhips.

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The longiſh white chequered and rough PHOLAS is about two inches long, and an inch and quarter in diameter at the largeſt part, which is nearer the head than the other end. It has five portions, as obſerved above, the largeſt of which appear like thoſe of common bivalved ſhell-fiſh, and beſides theſe there are two on the back, that are very broad and ſhort, and another ſingle one, which is long and narrow, lying under the joint. The colour is whitiſh, with a ſmall mixture of a faint yellow or brown, and the ſurface of the two large ſhells has furrows both ways, which give it a chequered appearance. The ſurface is as rough as a file, and this animal lies ſo cloſe in the holes of ſtones, that is has no way of getting out, the opening being no bigger than the diameter of a Gooſe-quill, but it thruſts out a ſort of trunk. It is common on the ſea coaſts of moſt parts of *Europe*. How theſe creatures make theſe holes, or how they get in, is not certainly known.

The WHITE PHOLAS, or FILE SHELL FISH, with ſhort oval and pretty large valves, has a ſhell not large enough to encloſe the body. It is of a whitiſh colour, ſomewhat hollow and ſtreaked long-ways. The ſurface is rough, and the texture tender and delicate; the two ſmaller valves are placed at the back of the others in a contrary direction, and the fifth is long, ſlender, and convex, covering the whole joint. It is found on the coaſts of *Kent* and *Suſſex*. There is another of this kind called the reddiſh rough Pholas.

The *Weſt-Indian* FILE SHELL FISH is the largeſt of this kind, being ſeven inches long, and two in diameter. The two large ſhells are very tender and brittle, hollow within, and of a beautiful white. There are deep furrows on the outſide, which croſs each other as in a file. The other valves are as in the former kinds. It is brought from *America*, but is very ſeldom met with.

CHAP. XLVII.

Of freſh Water Shell Fiſh.

THE OVAL LIMPET, with a crooked ſnout, is very thin, oval, and depreſſed, except in the middle, where it riſes into a beak. It is no bigger than a man's finger nail, and is found ſticking to ſtones in the brooks of *Northamptonſhire*.

The roundiſh TARGET LIMPET is ſmaller than the former; and, inſtead of a beak, has a ſort of a button at the top. It is very thin and delicate, and has a pretty ſmooth ſurface, of an olive brown colour. It is found in ſome of the rivers of *Leiceſterſhire*.

The OVAL LIMPET, with a hole at the top, is a quarter of an inch in diameter, and an eighth in height. The ſhell is very thin, rounded at both ends, and of a duſky brown colour. The hole is ſmall and oblong, and ſeems to be formed of two round holes broken into each other. This is common near *London*.

The SPIRAL SNAIL SHELL, with a clavicle a little elevated, and a round mouth, is three quarters of an inch in diameter, and the ſhell is firm, ſolid, and ſmooth at the ſurface. It conſiſts of about four turns, and the clavicle at the center is raiſed above the reſt of the ſurface. The colour is a greyiſh white, and the large turn has a ſtreak of black running along it, but loſes itſelf before it reaches the next turn. It is found in the lakes of the north of *England*.

St. *Cuthburt*'s HORN SHELL is of the ſpiral flatted kind, and about half an inch in diameter. It is firm and ſolid, and of a fine gloſſy brown, with a tincture of olive colour. It conſiſts of two or three turns, and the clavicle is depreſſed in the center; the mouth is partly filled up with the next turn of the ſhell, and the lip is narrow, but thicker, and of a paler colour than the reſt of the ſhell. It is common every where in *England*.

The taller SNAIL SHELL, with a long clavicle, is one of the moſt beautiful of this kind, being about an inch high, and three quarters of an inch in diameter.

The

The mouth is half round, and partly filled up by the ſucceeding turn of the ſhell: It is ſurrounded with a thin rim, of a paliſh yellow colour, and the clavicle has four turns, terminating in a point. The colour is of a duſky yellow, variegated with olive brown. It is ſometimes met with in deep rapid rivers.

The variegated oval SNAIL SHELL, with a blunt clavicle, is about three quarters of an inch high, and near half an inch in diameter. The body is large, but pointed at the extremity of the mouth. The clavicle has three turns, and the top is blunt. The colour is of a greyiſh white, variegated with belts of a deep brown. It is found in large rivers.

The large-mouthed brown SNAIL SHELL, with a ſharp clavicle, is about half an inch high, and the ſame in diameter. The body is oval, and the clavicle long and pointed at the top. The ſhell is of a duſky brown, and the mouth is remarkably large, and edged with a thin rim or lip. It is common in brooks.

The chequered freſh-water NERITE, or SNAIL SHELL, is about half an inch in length, and nearly as much in diameter, being almoſt of an oval ſhape. The clavicle has but two turns, and the mouth is narrow, with a lip on each ſide. The ſurface has furrows lengthways, and others tranſverſe. The colour is almoſt white, variegated with blackiſh clouds or ſpots. It is met with in the Trout ſtreams about *Uxbridge*, and other places.

The red freſh-water NERITE, or SNAIL SHELL, is about half an inch long, and above a third in diameter. The colour is of a pale red, but a little duſky, and the ſhell is more firm and thick than moſt others of this kind. The ſurface is pretty ſmooth, the mouth narrow, and the lips of a pale red. The clavicle is ſhort, and has two turns near one edge, at the ſmaller end of the ſhell. It is found in plenty in the rivers of *Northamptonſhire*.

The great conical SNAIL SHELL, with a depreſſed mouth, is about a third of an inch high, and its diameter is near as much at the baſe, where it terminates in a blunt little button. The colour is of a pale grey, and the ſubſtance is very thin and tender. The mouth

is partly filled up with the ſucceeding turn of the ſhell. It is found in ſeveral large rivers of *England*.

The long-mouthed SCREW SHELL is about three quarters of an inch long, and one third in diameter at the baſe. It conſiſts of about thirteen turns, and has a longiſh narrow mouth, edged with a furrowed lip. The ſurface is ſmooth and the turns flat, only the upper edge of each is deeply denticulated. The colour is grey, inclining to that of a pearl, but not always pure. There being many ſorts of this ſhell, the colour is not always the ſame; for in ſome it is of a browniſh caſt, in others greeniſh.

The brown PIPE SHELL, with a very large mouth, is about three quarters of an inch long, and half an inch in diameter. The body of the ſhell is bellied, and the clavicle very ſhort, conſiſting only of four indiſtinct turns, but it is pointed at the end. The mouth is large, and the lip extended a great way; the ſurface is ſmooth and extreamly thin; and the colour is of a duſky brown. In others it is white, and in ſome yellow.

The large mouthed *Ammon*'s HORN-SHELL is of a roundiſh, depreſſed figure, being in diameter about an inch, and towards the mouth a quarter of an inch thick. It conſiſts of about four turns, which grow gradually ſmaller, and form a little button at the center. The mouth is large in proportion, and ſurrounded with a little raiſed lip. The ſurface is undulated tranſverſely, and the colour is of a pale grey. Others are brown, and ſome yellowiſh.

The white ſmooth depreſſed BASTARD COCKLE is three quarters of an inch broad, and the ſame in length, from the joint to the oppoſite edge. The ſhells are not very much bellied, and are very thin. The ſurface is perfectly ſmooth, and the colour of a duſky white.

The gibbous whitiſh variegated COCKLE is about half an inch broad, and rarely as much from the joint to the oppoſite verge. The ſhells are conſiderably deep, and ſlightly ſtreaked with obſcure circular lines. The colour is of a duſky white, variegated with olive ſpots.

The

The reddiſh round ſtreaked COCKLE is about an inch and a half in diameter, and as much from the joint to the oppoſite edge. They are lightly ſtreaked with a pale browniſh red colour on the outſide, and are of a fine pearl colour within.

The blueiſh oval BASTARD COCKLE is about half an inch long from the joint to the oppoſite edge, which is broad and rounded; but at the top it runs up ſmaller, terminating bluntly. It is finely ſtreaked long-ways, and the colour is of a pale blueiſh grey.

The extremely thin greeniſh MUSCLE is near an inch from the joint to the oppoſite edge, the ſurface is lightly ſtreaked, and the colour is of a pale fine green.

The whitiſh variegated ſtreaked MUSCLE is an inch long, and half an inch broad. The colour is whitiſh variegated with brown, and the ſhells are both pretty hollow.

The narrow brown angular MUSCLE is near an inch long, but not half an inch broad, and the ſhells are both very deep. The ſubſtance is pretty thick and ſtrong, and the colour is a pale brown, with a tincture of olive.

The blueiſh rounded HEART SHELL, when viewed ſide-ways, looks like a heart painted on cards, and is about an inch long, and as much broad; as alſo but very little leſs in thickneſs. The ſurface is elegantly, but not deeply furrowed, and the colour is a duſky blue.

The reddiſh ſtreaked HEART SHELL is about half an inch long, and nearly as much broad; both the ſhells are very deep, and of a pretty firm, ſolid ſubſtance, lightly ſtreaked; but the intermediate ſurface is ſmooth and poliſhed, and the colour is white with a tincture of red.

CHAP. XLVIII.

Of the Sea Nettles.

THE SEA NETTLE is of two kinds, one of which comprehends thoſe that always remain fixed in one place, like ſea plants, and the other contains

thoſe that change their place. This diviſion is according to *Ariſtotle*; but *Reaumur* affirms, that there are none of theſe Nettles, not even thoſe that are found in the holes of ſtones, that are not capable of ſome progreſſive motion, though it is very ſlow. He alſo thinks, that the name of Nettle is not proper to many of them, ſince thoſe on ſome parts of the coaſts of *France* have not that ſtinging property that many pretend they have. *Pliny*, as well as *Ariſtotle*, takes the former kind of them to be of a middle nature, between plants and animals; though *Ariſtotle* imagines, that they have no vent for their excrements, and *Pliny* ſays, that they have a narrow tube for that purpoſe. But *Reaumur*, who has carefully obſerved them, affirms, that what they void is nothing at all but clear water, quite different from the nature of an excrement. However, he thinks they are real animals; becauſe they have organized bodies, and give ſigns of feeling when they are touched; beſides which, they lay hold of fiſh and ſhell-fiſh, which they eat, and have alſo a progreſſive motion. Theſe Nettles aſſume ſo many different ſhapes, that it is not poſſible to deſcribe them under any determinate figure; but, in general, their outward form approaches neareſt to a truncated cone, having its baſe fixed to ſome ſtone, to which it is found always adhering. Some are greeniſh, others whitiſh, and others again of a roſe-colour; likewiſe there are others of all the degrees of brown. In ſome of theſe Nettles, theſe colours appear every where on the ſurface, and in others they are mixed with ſtreaks or ſpots. Sometimes again theſe ſpots are diſtributed regularly, and at other times irregularly, but always in a very agreeable manner.

The wandering SEA NETTLES have nothing common with the preceding, except in the name, and they have different appellations in different places, as alſo according to their ſizes. Theſe may be more properly called Sea Jellies, according to *Reaumur*, which is very proper to the ſubſtance of which they are formed; for in reality their fleſh, if it may be ſo called, has always the colour and the conſiſtence of a jelly. When they are thrown upon the ſea coaſt, they appear to be quite motionleſs, which perhaps may be owing to the ſhocks

ſhocks they have received againſt ſtones or the ſand, which may be ſufficient to deprive them of life; for it is certain they are a ſort of animals.

The firſt Sea Nettle is ſo called by the ancients, on account of its ſtinging quality, which produces an effect much the ſame as the common Nettle. The ſecond is called by *Rondeletius* the aſh-coloured Nettle, and has no fleſh; for it reſembles a head of hair. This is found in the clefts of rocks, which it never leaves. The third is red, and is like the firſt kind, but has more hair, and is more thick and broad. This is ſometimes fixed to the rocks, and ſometimes wanders here and there. The fourth adheres to the heads of Oyſters, but principally to the Purpura. The upper part is more hard and thick than that of other ſorts, and all round it there are ſhort hairs; but from within there proceed long ſtrings of a purple colour.

The fifth kind, which is of the wandering ſort, is called by the *Genoeſe* CAPELLO DI MARE, that is, the SEA HAT; for one part of this Nettle is a ſpungy, hollow, round maſs, and pierced in the middle. Round about it there is a little red cord, which gives it the appearance of a hat, or rather of a bonnet. The other part reſembles the feet of Cuttle-fiſh, of which there are eight that are large and ſquare at the beginning, and terminate in a point. The body is ſo ſhining and tranſparent, that it dazzles the eyes. They melt like ice, when they are handled for ſome time, and they ſting the hands, which cauſes a painful itching. The ſixth Sea Nettle has but four feet or branches, which are long; and on the upper part there are oval figures, which are diſpoſed in the form of ſtars.

THE NATURAL HISTORY OF SERPENTS.

CHAP. XLIX.

Of Serpents.

A VIPER differs from other Serpents, not only in moving more ſlowly, and in never bounding or leaping; but in bringing its young to perfection before they are excluded; whereas the females of other Serpents lay eggs, which are either hatched by the heat of the ſun, or in the place of their retreat. Some have thought, that a Viper is an emblem of Malice and Cruelty; but without reaſon; for they never do any miſchief, unleſs they are exaſperated, and then they become furious, and bite very hard. However, it muſt be allowed, that it attacks and kills the animals deſigned for its nouriſhment, namely, Cantharides, Scorpions, Frogs, Mice, Moles, Lizards, and the like, which it ſwallows whole, after they have been killed with its large teeth.

Vipers will live ſeveral months without nouriſhment, nor will they eat after they are taken; for though they are

are very fond of Lizards, yet, when theſe have been thrown into a tub, in which were ſeveral Vipers, they were never touched. The fleſh of a Viper is viſcous and hard, and does not digeſt very eaſily: the ſkin is ſcaly, and its colour on the upper part of the body is yellow, with a reddiſh caſt in the males, which is whitiſh in the females. In the middle of the back, there is a blackiſh line dentated on each ſide, or rather a chain of blackiſh ſpots, which runs along from the head to the end of the tail. A little below is another row of blackiſh ſpots, and on the lower part of the ſides there is a line conſiſting of little white ſpots, and then another of black, which are larger, and at laſt a third, which are whitiſh. The belly is covered with long tranſverſe black ſcales, which are leſs on the other parts. Beſides, the colour is not the ſame in all, at leaſt the ground is different; for it is ſometimes whitiſh, ſometimes red, grey, or yellow, and at other times tawny. This is always ſpotted with black, or at leaſt with a dark colour. Upon the head there are two rows of ſpots, which reſemble horns, that riſe between the eyes, and run along the ſides on the top of the head. Oppoſite the middle of theſe horns, there is a ſpot of the ſize of a lentil, which is the beginning of thoſe that run along the ſpine of the back.

They are generally about two feet in length, and about the thickneſs of the thumb of a large man. The head is flat, and has a border at the extremities of the upper part, in which it differs from Snakes. It is about an inch long, and at the top two thirds of an inch broad, which, diminiſhing by little and little, is one third of an inch about the eyes, and half as much at the end of the muzzle. The neck, at the beginning, is about as thick as a man's little finger; and the tail of the females is always more thick and long than that of the males, and they terminate in a point in both.

Vipers caſt their ſkins generally twice a year, and the new ones ſeem always more beautiful, and the colours more bright, than that which they have quitted. Soon after this, another ſkin begins to be formed, ſo that it may be ſaid, that they always have a double

ſkin. When a Viper is cut into ſeveral parts, after the ſkin is taken off, and the bowels out of the belly, they will all live for ſeveral hours, and the head is always ready to bite; nor will this be leſs dangerous now than at another time. Vipers do not make holes in the earth, like other Serpents; for they generally hide themſelves under ſtones, or the ruins of old houſes. However, in fine weather, they delight to lie among buſhes, and in tufts of graſs.

Vipers have generally two large teeth without the upper jaw, ſurrounded, about two thirds of their height, with a pretty thick veſicle full of a tranſparent yellowiſh liquor, and pretty fluid. In this veſicle, and in the middle of the liquor under the large and principal tooth, there are ſeveral teeth irregularly placed, ſome longer than others, and all crooked. There have been ſometimes ſix or ſeven on the ſame ſide, under the ſame tooth, and in the middle of the ſame veſicle. Theſe large teeth are about one ſixth of an inch long, and are hooked, white, hollow, and tranſparent throughout, even to their very point, which is extremely ſharp. Theſe teeth generally lie cloſe to the upper jaw, and their points do not appear till the moment the Viper is going to bite. There are likewiſe other crooked teeth in both jaws, which are hollow and tranſparent, but very ſmall. Their number is uncertain, they being ſeldom found the ſame in any two Vipers, which perhaps may be owing to their being ſo liable to be broken off.

There is a great difference between the teeth and jaws of Vipers and thoſe of Snakes; for theſe laſt have four upper jaws, and two lower. Two of the former lie near the edge of the lip, and ſerve, as it were, to defend the other jaws, which have the ſame ſituation as in Vipers. Some Snakes have near an hundred teeth, which are all fine, crooked, hollow, white, and tranſparent, as in Vipers.

The tongue of a Viper is compoſed of two long fleſhy round bodies, which terminate in ſharp points, and are very pliable. It is about an inch and a half long, and its root is connected very ſtrongly to the neck by two tendinous bodies, near a quarter of an inch in length.

length. The tongue of ſome Vipers have three or four points; and, though they are often darted out, they do no harm, except terrifying thoſe that behold them; for they ſerve principally to catch the ſmall animals, which the Viper lives upon.

The VIPER, of *Ceylon*, has ſmall eyes, ſeated over the noſtrils, which ſeem to be four in number; becauſe over the jaw, on each ſide, there are two whitiſh ſpots that reſemble eyes. The noſe is covered with pretty large ſcales, and theſe are adorned with an undulated black and red ſtreak. The belly is of a bright yellow, ſpotted with a reddiſh colour, and furniſhed with whitiſh ſcales.

The *Javan* VIPER is covered with ſcales of a ſea-green colour, and ſurrounded with ſtripes of a dark tawny, that run tranſverſely round the body from the head to the tail. The head is defended by large reddiſh ſcales, only over the eyes there are two white tranſverſe ſtripes. About the neck there is a red circle, and the ſcales on the belly are of a bright yellow, but bordered on the ſides with a black line, like a ſilken thread.

The MARASSUS is an *Arabian* Viper, with reddiſh ſcales on the upper part of the body, ſhaded with large dark brown ſpots, which reach to the ſides. Theſe ſpots on the back are mixed with ſtreaks of a ſorrel colour, which run croſs-ways. The head is covered with large uniform ſcales, and the mouth is edged with a beautiful border; the ſcales on the belly are of a yellowiſh blue, ſpeckled with red.

The AMMODYTES, of *Ceylon*, is a very large and dangerous Serpent, with a mouth full of ſharp teeth. The eyes are large and ſparkling, and the forehead is covered with ſmall round ſcales, ſome of which are yellow, others red, and ſpeckled with black. On each ſide of the eyes there are black ſtripes that reach to the neck; but the body, above and below, is of a whitiſh aſh colour, and on the back are angular ſpots variegated with white and brown. The ſcales that cover the upper part of the body are placed like net-work, with large meſhes, and the tail is ſpotted with brown, ending in a bony point.

The AMMODYTES, of *Surinam*, is a Serpent, which the negroes have in high eſteem, and think themſelves very happy, if they come into their huts; but their colours are ſo many and beautiful, that they ſurpaſs all deſcription.

The AMMODYTES, or SAND SERPENT, ſo called, becauſe it hides itſelf in the ſand, and is ſaid to be very like a Viper. It is a cubit in length, of a ſandy colour, and the head is broader than that of a Viper, as well as the jaws. On the upper part of the noſe, or muzzle, there is an eminence like a wart, which has given occaſion to ſome to call it the Horned Serpent. It is to be met with in *Africa*, *Illyria*, *Italy*, and other parts of the world.

The BAYAPNA is an *African* Serpent, with a longiſh white head ſpotted with cheſtnut colour, and the neck is adorned with a narrow collar. The eyes are large, ſeated near the mouth, and the upper part of the body is covered with ſquariſh ſcales as white as ſnow, from the head to the tail, which laſt is long and ſlender. The neck is ſmall, marked with oblong ſpots of a bright bay, which are more large on the back. Near the tail the ſpots are ſmaller, and the belly is of a yellowiſh aſh colour, ſpeckled with red on each ſide throughout its length. It lives upon birds and frogs.

The GERENDA, ſo called by *Seba*, is a Serpent of the *Eaſt-Indies*, to which they pay divine honours. It generally lies folded up, and has a ſkin finely ſpotted; it is covered with very thin ſcales of a yellowiſh aſh colour, and encircled with red bands, which look as if they were embroidered, or rather like ribbands. The head is oblong, and like that of a hound, and of a very pale aſh colour; it is covered with ſmall ſcales, that become larger upon the noſe; and from thence to the neck, there runs a deep red ſtreak, made like the links of a chain. Another ſtreak, much of the ſame ſort, proceeds from the eyes to the jaws; the edges of the lips are turned outwards and folded. The teeth are ſmall and ſlender, the eyes lively and ſparkling, and the noſtrils large; the tranſverſe ſcales on the belly are of a yellowiſh aſh colour, and the ſmall ſcales of a bright

aſh

aſh colour, ſpotted in the middle with a deep red. This Serpent is held in great veneration in *Japan* and *Calicut*; though the inhabitants of *Malabar* are greatly afraid of it.

The *African* GERENDA is of a prodigious bulk, and is worſhipped by the inhabitants on the coaſt of *Moſambique*. The ſkin is not ſo finely ſpotted as the former; but is variegated all over the body with very fine white aſh-coloured and black ſpots. The head is ſomewhat like that of a dog, as well as the noſe, which is finely ſpotted, and ſmall round ſcales cover the top of the head. The mouth when open ſeems to be furrowed, and the tongue, which is cloven in two, is red; the tail terminates in a point.

The JAUCAACANGA, ſo called by the *Braſilians*, is named *Tedagoſo* by the *Portugueſe*. The *Dutch* that live in thoſe parts call it the Hunting Serpent, becauſe it winds along with incredible ſwiftneſs, inſomuch that it is very difficult to get out of its way. The natives do all they can to render theſe Serpents tame, for they receive them into their houſes, where they free them from all vermin. The head is oblong, the mouth ſmall, and the noſe is like that of a hound; the eyes are large and very fine, as well as the ſcales on the noſe; but thoſe on the forehead are ſmall, thin and round. The reſt are pretty large in proportion, as white as ſnow, ſhaded with a pale red, and variegated with gold colour. The teeth are crooked, the tongue cloven, and of a pale red, and the tail is of a deeper colour than the body. Under the belly they are aſh coloured with red edges.

The HŒMORRHOIS, which is the name of the bleeding piles, is ſo called, becauſe thoſe that are bit by it have hemorrhages or fluxes of blood from all parts of the body. It is but ſmall, being only a foot long, and it has a very bright and ſhining ſkin. The eyes are red and ſhine like fire, and the back is full of black and white ſpots. The neck is ſmall, the tail very ſlender, and it has ſmall horns above the eyes.

The ACOALT is a water Serpent found in the *Eaſt-Indies* that has very ſmall teeth, and its bite is not dangerous. It is pretty long, and variegated with broad

black ſtreaks; but the back and the under part of the belly are blue: the upper part of the head is black, the lower yellow, and the ſides blue.

The ARGUS is a *Guinea* Serpent; it is very uncommon, and is ſo called, becauſe it is covered with ſpots from the head to the tail, that reſemble eyes. On the back there is a double row of them, which are the largeſt; the ground colour of the ſcales is of a bright cheſtnut colour, only on the back between the eyes it is of a dark brown.

The PRINCE of SERPENTS, ſo called by *Seba*, is a native of *Japan*, and has not its equal for beauty. The ſcales which cover the back are reddiſh, and finely ſhaded and marbled with large ſpots of irregular figures. The head is oblong, and the fore part is covered with large beautiful ſcales. The jaws are bordered with yellow, and the forehead is marked with a black marbled ſtreak, which reaches to the end of the neck; the eyes are handſome, lively, and brilliant. It is a very harmleſs animal.

The ASP is a Serpent very often mentioned by ancient hiſtorians; but they have given us no accurate deſcription of it. Some ſay it is of the ſize of a common Snake, only the back is broader, and their necks ſwell greatly when they are angry. But as to their teeth growing exceeding long and ſtanding out of their mouths like Boars, which ſome aſſert, ſeems to be fabulous. However, it may be true, that two of the longeſt are hollow, and that they are thoſe which contain the venom. They are generally covered with thin pellicles, which ſlide down when the Serpent bites. The ſkin is ſaid to be covered with ſcales, which are redder than thoſe of any other Serpents; but others affirm they are of very different colours. Some ſay they are two cubits long; others four; others again five; and *Peter Kolben* affirms he has ſeen them ſeveral ells long; ſo that in ſhort, there is nothing certain to be ſaid about it. They are undoubtedly bred in *Africa*, and it was by the bite of one of theſe Serpents that *Cleopatra* is ſaid to have ended her days.

The GIBOYA is the largeſt of all the *Braſilian* Serpents, being ſometimes twenty feet long and very thick.

Travellers

Travellers pretend it will ſwallow a ſtag whole; but this muſt be a fable. The teeth are very ſmall in proportion to its body, and this Serpent is not at all venomous. It lies in wait for wild animals near the paths, and when it throws itſelf upon one of them, it winds about him in ſuch a manner, and with ſo much ſtrength, that it breaks all its bones; after which it mumbles the fleſh in ſuch a manner, as to render it fit for ſwallowing it whole.

The HIPPO, an *African* Serpent, ſo called by *Seba*, is covered with ſcales of a bright lead colour, appearing very beautiful to the eye; the head is variegated with red, yellow, white, and blue, very curiouſly mixed; and each ſide of the head and neck are marked with four ſpots as red as coral. Along the ſpine, from the head to the tail, there runs a whitiſh ſtreak, which ſeems to conſiſt of a row of oval pearls, and on each ſide the belly, which is covered with yellow ſcales, there runs another white ſtreak.

The HŒMACETA is a Serpent of *Aſia*, which *Seba* procured out of *Tabareſtan*, a province of *Perſia*. It is covered with ſcales exactly reſembling oriental agate. On each ſide the belly there are ſpots of deep red, and the fore part of the head is covered with uniform pale red ſcales; but the hinder part of the head and neck are adorned with white ſpots like roſes; the ſcales of the belly are of the colour of apple bloſſoms, inclining a little to red in ſome places.

The SCYTALE is of a long round ſhape like a ſtaff, from whence it has its name; for Scytale ſignifies a club or ſtaff in the *Greek*. Some ſay this Serpent is very full of marks or ſpots on the back, which render this animal extremely beautiful. It has a very ſlow motion, and therefore cannot purſue any one to hurt him. The head and tail are ſo much alike, that it is hard to diſtinguiſh one from the other.

The AMPHISBŒNA, or the double-headed SERPENT, is remarkable for moving along with either the head or the tail foremoſt, as the *Greek* name imports. For this reaſon, many authors have affirmed, that this animal has two heads, which muſt needs be falſe: for there is no ſuch creature in the univerſe.

The

This error took its riſe very probably from the thickneſs of the tail, which might look at a diſtance like another head; but, if thoſe who have affirmed it had had a nearer view, they would ſoon have diſcovered their error. Some aſſert, that this Serpent is like the Scytale, and differs only from it in going backward and forward. It is as thick at one end as the other, and the colour of the ſkin is like that of the earth. It is rough and hard, and variouſly ſpotted. It is to be met with in *Lybia*, and likewiſe in the iſland of *Lemnos*.

The *American* AMPHISBŒNA is of a fleſh colour, and ſeems to have neither eyes nor noſtrils: its mouth is a ſmall cleft, without teeth or tongue: however, it is thick, ſmooth, and covered with large ſcales of a fleſh colour; the head is blunt, and as thick as a man's head, as ſome ſay; but this may be doubted: ſome place them among the blind Serpents.

The APAMEA is a *Syrian* Serpent, which ſeems to have two heads, and the body is ſmooth and ſhining. The head is ſmall and of a pale yellow, only there is a ſtreak, which reaches from the eyes to the noſtrils. It is round, thick, and flat, and covered with ſmall ſcales, like lozenges, of a violet purple underneath the body, variegated with a ſtraw colour. The tail is thick, and blunt at the end.

The IBIJARA, ſo called by the *Braſilians*, and by the *Portugueſe* COBRA DE LOS CABECAS, is reported to have two heads, but falſely. The error aroſe from its ſtinging with the tail, as well as biting with the mouth; beſides the head can hardly be diſtinguiſhed from the tail, becauſe they are both of the ſame ſhape and ſize. It is about as thick as a man's little finger, and a foot and two inches long. It is of a whitiſh colour: it glitters like glaſs, and is marked with beautiful rings, and lines, nearly of a copper colour. The eyes are very ſmall, and hardly viſible; for they look like ſmall holes in the ſkin, made with the pricking of a needle. It lives under the earth, and never appears but when turned up by digging. It lives upon Ants, and its venom is ſo fatal, that the *Portugueſe* affirm there is no cure for it.

The

The CÆCILIA, the BLIND WORM, or SLOW WORM, ſome have ſuppoſed to be both blind and deaf; but this is a miſtake, for they certainly have eyes, though very ſmall. The teeth are ſet in the mouth like thoſe of a Cameleon, and the ſkin is very thick. It is of a pale blue, with blackiſh ſpots on the ſides. Likewiſe, it is quite ſmooth, being without ſcales. It is about a ſpan in length, and as thick as a man's finger. It is to be met with in *England*, as well as in many other countries; and it brings forth its young ones alive like the Viper.

The ACONTIAS, or DART, is ſo called, becauſe it ſhoots itſelf forward like a dart. It is of a whitiſh aſh colour, and on the belly is entirely white, with little ſpots like eyes upon the back. The neck is black, and from thence there run two white lines along the back to the tail. The ſpots, which are black, are no bigger than a lentil, and they are all encompaſſed with a white circle. Authors affirm that they get upon trees, from whence they dart themſelves upon people as they paſs along, and that their bite is mortal. They are to be met with in *Egypt*, *Lybia*, and the iſlands of the *Mediterranean* ſea. Late authors mention different kinds of them, the deſcriptions of which have been ſent to *Europe* from different parts of the world.

The DART of *Amboyna* is called by the *Dutch Spait-ſtang*, which is as much as to ſay, the *Syringe Serpent*, becauſe it raiſes itſelf as ſwiftly as water out of a ſyringe. It is as thick as a man's arm, ſix feet in length, and is covered with ſcales diſpoſed in the form of lozenges, which are of a reddiſh brown, and of a ſea-green on the back and ſides; but thoſe on the belly are of a bright aſh colour. The ſkin is ſmooth, and the head of a middle ſize; but the eyes are very large and ſhining, with ſmall teeth, and a long pointed tail.

The GRILL, of *Surinam*, is a Serpent almoſt a foot long, and an inch thick, being in the ſhape of a cylinder from the head to the tail. The ſkin is ſmooth without ſcales; on the back there are points a little elevated, and there are wrinkles on the ſides. The head is ſmooth

and

and round, and the upper jaw is long, blunt, and furniſhed with a thread on the ſide of each noſtril. The holes of the noſtrils are a good diſtance from each other, and are as ſmall as the points of needles, as well as the eyes, which however are very brilliant; the teeth are ſmall, and the tail, if it may be ſaid to have any, is blunt and wrinkled like earth worms.

The *American* BLIND SERPENT is white, mixed with fleſh colour, and is covered with ſmall ſcales from the head to the end of the thick tail; and they are divided by fine longitudinal ſtreaks that croſs others which are circular. The head is large and ſhort, and the mouth is furniſhed with teeth. The eyes are very ſmall, and covered with a membrane; but the noſtrils are large. It feeds upon hog-lice, and other ſmall inſects.

The ANGUIS ÆSCULAPII, the Snake of *Æſculapius*, is a harmleſs kind of Serpent. In *Italy*, it is ſuffered to come into the houſes, and often gets into the beds where people lie; but though it is an innocent ſort of animal, yet it will bite when exaſperated. It is of an oblong ſhape, an ell long, and of a yellowiſh colour, except on the back, where it is brown. Both jaws are armed with many very ſharp teeth; and on the neck two ſmall eminences appear with an empty ſpace between them. They are very common in *Spain*, *Italy*, and other warm countries.

The BITEN of *New Spain*, is of a thick ſhort ſhape, being remarkable for its ſhort tail, which is diſtinct from the body; the ſcales which cover the middle of the body are long and broad; but towards the head and tail they are narrow; theſe are whitiſh, variegated with red, pale, and deep yellow, mixed here and there with black ſpots. In the back part of the mouth there are crooked teeth; but there are none before.

The BITEN, of *Ceylon*, is a ſort of large Snake covered with great oblong ſcales, which adhere to the ſkin by the root; but there are other parts as looſe, and ſo moveable, that when it is angry they riſe up like hair that ſtands an end. They are of a deep yellow where they touch each other, ſhaded with blackiſh

ſpots;

ſpots; but between them there are other ſcales of a yellowiſh aſh colour. The neck is marked with oval ſpots, and the head is ſhort and of an oval ſhape: the eyes are large, brilliant, and full of fire; and in the mouth there are only four long crooked teeth, two above and two below; theſe are connected to the jaws on each ſide by tendons; but at the bottom of the palate there are others very ſmall and crooked. The tongue is forked.

The RATTLE SNAKE is bred in *America*, but in no part of the old world. Some of theſe are as thick as a man's leg, and ſix feet in length; however, there are many that are no larger than a common Snake, and theſe are moſt frequent. They receive their name from the rattle which is at the end of their tails, that conſiſts of ſeveral ſhells, which are very thin and of a horny ſubſtance.

They are of an orange, tawny, and blackiſh colour on the back, and of an aſh colour on the belly inclining to that of lead. The male may be readily diſtinguiſhed from the female by a black velvet ſpot on the head; and beſides, the head is ſmaller and longer made. The young Snakes of a year or two old have no rattles at all, but thoſe that are older have ſeveral. Many have been killed that have had from eleven to thirteen joints each. They ſkake and make a noiſe with thoſe rattles with prodigious quickneſs when they are diſturbed, and their bite is very dangerous; but not always of the ſame force, it being more or leſs mortal in proportion to the vigour of this animal; for this reaſon it is always more fatal in *March* and *April*.

This Snake is a very majeſtick ſort of a creature, and will ſcarce meddle with any thing unleſs provoked; but if any man or beaſt offends it, it makes directly at them. Many have affirmed, that a Rattle Snake has the power of charming Squirrels, Hares, Partridges, and the like, in ſuch a manner as to make them run directly into their mouths; but this, upon ſtrict examination, appears to be a miſtake.

The large *Mexican* SERPENT, called DEPONA, is remarkable for the enormous ſize of its head and jaws. The mouth is armed with cutting crooked teeth, among which

which there are two tuſhes, which other Serpents have not, and which are placed in the fore part of the upper jaw. All round the mouth there is a broad ſcaly border, and the eyes are ſo large that they give it a terrible aſpect. The forehead is covered with large ſcales, on which are placed others that are ſmaller, curiouſly ranged: thoſe on the back are greyiſh, and along it runs a double chain, whoſe ends are joined in the manner of a buckler. Each ſide of the belly is marbled with vaſt ſquare ſpots, of a cheſtnut colour, in the middle of which is another that is round and yellow: the tranſverſe ſcales of the belly are variegated with large ſpots, of a reddiſh colour, as well as the long ſlender pointed tail. They avoid the ſight of a man, and conſequently ſeldom or never do any harm.

The CENCOALT is a ſort of a Viper of *New Spain*, and has an oblong head flatted before, with large noſtrils: the mouth has a large dentated border, and the eyes are large and ſparkling: the body is covered with ſpeckled ſcales, ſhaded with ſpots that are partly red, partly yellow, and partly of a cheſtnut colour: the ſcales on the belly are of a bright aſh colour, variegated with yellow, and the tail and neck are long and ſmall.

The BOIGUACU is called by the *Portugueſe* COBRA DE VEADO, and is ſuppoſed to be the largeſt of all theſe kinds of animals. They have been ſeen from ſeven to twenty-four feet long; and *Marcgrave* affirms, that he has ſeen one ſwallow a goat whole. This ſeems, to be the ſame that *Condomine* mentions by the name of the Coral, and ſays it is remarkable for the variety and livelineſs of its colours; but more eſpecially for its largeneſs, for it is affirmed they are from twenty-five to thirty feet long. This author carried two of the ſkins to *France*, one of which was fifteen feet long, and a foot in diameter. It is thickeſt in the middle of the body, and grows ſhorter and ſmaller towards the head and tail. On the middle of the back there is a chain of ſmall black ſpots running along the length of it, and on each ſide there are large round black ſpots, at ſome diſtance from each other, which are white in the center. Between theſe, near the belly, there are

two

two rows of leſſer black ſpots, which run parallel to the back. It has a double row of ſharp teeth in each jaw, of a white colour, ſhining like mother of pearl. The head is broad, and over the eyes it is raiſed into two prominences. Near the extremity of the tail there are two claws reſembling thoſe of birds.

Piſo affirms, that thoſe Serpents lie hid in thickets, from whence they will come out unawares, and raiſing themſelves upright on their tails, will attack both men and beaſts. It makes a ſtrange hiſſing noiſe, when exaſperated, and will ſometimes leap from trees, and wind themſelves round the bodies of travellers ſo very cloſely as to kill them. However, *Condomine* makes no mention of this, but he takes notice of their biting, which he affirms is not at all dangerous; for though the teeth are ſo large as to inſpire any one with terror that behold them, yet their bite is not attended with any other conſequence than what may proceed from an ordinary wound.

Dellon affirms, that in the *Eaſt-Indies* there are Serpents of twenty feet in length, and ſo thick, that they are able to ſwallow a man. They generally haunt deſart places, for though they are ſometimes ſeen near great towns, on the ſea ſhore, or on the banks of rivers, yet it is generally after ſome great inundation. He never ſaw any but what were dead, and they appeared to him like the trunk of a large tree lying on the ground. The *Americans* pretend that one of theſe Serpents will ſwallow a Deer horns and all; and the *Indians*, that it will ſwallow a Buffalo whole; both which ſtories are very improbable. However it is pretty certain that one of the *Eaſt-Indian* Serpents did actually ſwallow a child.

The CUCURUCU is a Serpent from nine to twelve feet long, and thicker than a Rattle-Snake. Their ſcales are much alike, only theſe are yellow and marked on the back with large black ſpots. It is a very venomous animal and greatly to be feared, and yet the fleſh is eaten by the ſavages.

The IBOBOCA, of the *Braſilians*, is called COBRA DE CORAL by the *Portugueſe*. It is two feet long, and almoſt an inch thick; and the tail towards the end is round

round and ſharp like a bodkin. All the belly is of a ſhining white, and the head has white cubical ſcales, which are black on the edges. Next to theſe is a ſpot of a bright red colour, the ſcales of which are black on the edges, as all the red ſpots are. To this a black ſpot ſucceeds, then a white, then a black, and again a red, and ſo on. The red ſpot is about an inch long; and two white, and three red, taken together, are an inch and a half long, but equal to each other. The edges of the white ſpots are always black. The bite of theſe Serpents is generally fatal; however it can move along but ſlowly.

The BOITJAPO, of *Braſil*, has the name of *Cobra de Lipo* among the *Portugueſe*, and is ſeven or eight feet in length, but is ſcarce ſo thick as a man's arm. The body is round, and the tail ends in a ſharp point. The colour in general is olive, except under the belly, which is yellowiſh, and covered with beautiful triangular ſcales.

The ſpine of the back is furniſhed with a row of prickles, which runs from the head to the tail. The ſcales on the upper part of the body are placed like the meſhes of a net with a double thread, which croſſing each other form a ſort of lozenges. The head is defended by a buckler, conſiſting of large long ſcales, and the eyes are large, ſparkling, and full of fire. The mouth is armed with many ſmall teeth. It lives upon frogs, and is very venomous.

The BOYUNA is a Serpent of *Ceylon*, which the inhabitants are fond of meeting with; becauſe they take it to be a ſign of good luck, and more eſpecially if it happens to come into their houſes. The mantle on its back conſiſts of a fine web of ſmall ſcales, which are aſh coloured and yellow, and made like a net; they are bordered with a mixture of large bay-brown ſpots, and on the belly there are others that are ſmaller, inclining to a roſe colour and ſpeckled. The head is covered with beautiful pretty large ſcales, of a bright cheſtnut colour, ſpeckled with red and brown. The ſcales on the belly are white, ſpotted with brown.

There is another Boyuna of *Ceylon*, with a white head defended with large ſcales, and adorned with a

ſort

ſort of crown. The edges of the jaws are tranſverſed with black ſtreaks, and on the hind part of the head is the print of a Tiara. The fore-part of the body is half a *Dutch* ell in length, and there are very large ſpots, variegated with white, chiefly on the back, though they extend here and there to the belly. The ſcales of the belly and the tail are ſurrounded with a very narrow roundiſh border.

The BOJOBI, ſo called by the inhabitants of *Braſil*, is known to the *Spaniards* by the name of *Cobra Verde*, or the Green Serpent. It is about an ell in length, and as thick as a man's thumb. The green colour on the body is like that of a leek, and ſhines very much. The mouth is large, and the tongue black, and it delights to be near buildings. It is a very harmleſs animal, unleſs any one vexes it, and then it will bite, which is always fatal.

Another BOJOBI is a Serpent of *Ceylon*, with large lips, and is of a beautiful ſhape, but it has a terrible look; the lips are thick and hanging, and the teeth ſharp; but they are hid in ſheaths within the jaw, and have a membranous covering. The lips are edged with a border of large, pale, reddiſh ſcales made like ſtuds, and the eyes are red and ſparkling. The upper part of the body is of a ſhining orange colour variegated with ſtraw coloured ſpots, and adorned with belts of a reddiſh brown.

Seba informs us, that this Serpent is of different ſizes, though ſeldom above that before-mentioned; the ſcales are large, long, and of a ſea-green colour, variegated on the back with long, large tranſverſe ſtripes as white as alabaſter. The ſcales on the belly are yellow and large; the head is well made, and ſhaded above with bright red, but greeniſh underneath; the eyes are ſurrounded with large ſcales, and the flat ſnout is quite covered therewith; the upper lip is bordered with the like ſcales; and the tongue is forked and pointed, being white and reddiſh; whereas the tongues of moſt other Serpents are black.

There is another Serpent called BOJOBI, and by ſome the Crowned Serpent. It has a wide, ſhort mouth, with a black head, marked at the top with a yellowiſh crown,

crown. The eyes are ſmall, and of a ſparkling green; but the noſtrils are large and open. This Serpent generally keeps in old hollow trees.

The BOIQUATRARA is a Serpent of the iſland of *St. Maurice*, which word ſignifies the Painted Serpent. Theſe kind of Serpents live a long while, and become extremely large; the upper part of the body is adorned with a long chain of cheſtnut-coloured links, ſomewhat like a net, and on each ſide the belly there are round ſaffron-coloured ſpots, diſpoſed in a beautiful order. The other ſcales are large and ſpeckled with a pale yellow; the head is not large in proportion to the body; but it is finely adorned with ſcales, and thoſe on the belly are of an aſh-coloured yellow, and barred with rays.

The BOIQUATRARA, of *Amboyna*, is ſo finely coloured, that it is likewiſe called by the natives the Painted Serpent. It is beautifully variegated with blue ſea-green, and dark green: the ſcales on the belly are of a ſea-green, marked on the upper part with four yellow ſtripes, which run from the head to the tail. The head terminates like a long-pointed bill; but the mouth is ſo large, that it can ſwallow a common fowl whole; but it has no teeth. This Serpent makes a kind of a ſinging noiſe, by which it is ſaid to invite birds within its reach, and then leaps upon them.

The CARACARA is a *Braſilian* Serpent, with a greyiſh head, the back part of which, and the neck, are covered with ſcales of the ſame colour, marked with dark-brown ſpots, that run tranſverſly in the form of a bow, and cuts a blackiſh chain in the middle of that part. Where this chain terminates the ſcales become of an oblong ſhape. That part of the Serpent where this chain begins is a little ſwelled, and inclineable to a red colour. The ſcales on each ſide of the belly are of a bright aſh-colour, and on each ſide the head is a black ſtreak, which terminates at the nape of the neck. The eyes are large and ſhining.

The JARARACA is a ſhort Serpent, ſeldom exceeding half a cubit in length. There are prominent veins in the head, as in thoſe of Vipers, and it hiſſes much

much in the ſame manner. It is marked with red and black ſpots; but all the other parts are of a dirt colour. The *Portugueſe* have a remedy for its bite called by them *Herva de Cobras*, and by the natives *Caatia*, which being applied outwardly, and taken inwardly, cures not only the bites of this, but of all other Serpents.

The TARESBOYA, and CACABOYA, are two amphibious Serpents, that live as well on land as in the water; and upon that account are not unlike our Water Snakes. However they are not ſo pernicious as thoſe of *Europe*. They are quite black, and not very large, and will bite when angered, but the wound admits of an eaſy cure. There is one of this kind of a yellow colour, ſix palms in length, which is more to be feared by the country people, on account of devouring the poultry, than from the danger of its bite.

The GIRAWPIAGARA, which ſignifies an Egg-eater, is an oblong Serpent or Snake of a black colour, only it is yellowiſh on the breaſt. They are very nimble in getting up the higheſt trees, where they ſeek birds-neſts, and devour their eggs.

The JARARACUCU is about thirty inches in length; its teeth are very large, and when it is about to bite, they are thruſt out of the mouth like fingers; but at other times they are hid within the cheeks. The venom is a yellow fluid, ſo powerful, that it will kill a man in the ſpace of twenty-four hours. Theſe Serpents bring forth ſeveral young ones at a time, and ſome of them that have been killed, have been found to have thirteen in their belly.

* The SERPENS INDICUS CORONATUS is called by the *Portugueſe* COBRA DE CAPELLO, which ſignifies the HOODED SERPENT, and is ſo named becauſe it has an excreſcence like a hood or cap on the top of the head. The ſkin is of a gold colour, and it is generally about a yard in length, and about three quarters of an inch thick. It is agreed on all hands that the poiſon of this Serpent is extremely dangerous, and perhaps more ſtrong than that of any other.

The

The *American* COBRA DE CAPELLO, ſo called by the *Spaniards*, ſeems to be a ſort of Viper. The upper part of the body is of a dark red, and ſome white ſtreaks run acroſs it: the belly is of a pale red, and the upper part of the tail of a ſcarlet colour; but the top of the head is whitiſh. The forehead is marked with a ſpot in the ſhape of a pair of ſpectacles, and the eyes are ſmall. It lives upon ſpiders and inſects of the like kind.

The COBRA DE CAPELLO, of *Siam*, from the head to the end of the tail is of a greyiſh aſh-colour, and has a little browniſh red on the back. The ſcales on the belly are large, and of a reddiſh pale inclining to an aſh-colour. The mark on the forehead is not ſo large as that of the foregoing, and the chequered ſcales are without ornament. The eyes are large and ſhining, and the fore-teeth are ſo ſmall that they can hardly be ſeen, being covered with a looſe ſkin; but the hinder teeth are ſharp and crooked.

The SERPENS OCELLATUS, or the EYED SERPENT, is ſo called, on account of the various white ſpots on its black ſkin. Some give it the name of the Dart, on account of the ſwiftneſs with which it throws itſelf on its enemy, when it meets with an opportunity. It may be taken with a great deal of eaſe; for a ſmall blow on the back with a ſtick will ſtop its career, and then there is no difficulty in killing it.

The TREE SERPENT is ſo called, becauſe it perches commonly upon trees; it is three ells in length, three quarters of an inch thick, and it winds itſelf about the branches of trees; where it continues a long while without motion. One not accuſtomed to theſe Serpents, unleſs he has a very piercing ſight indeed, may eaſily miſtake them for branches of trees, which they do not differ from in colour, except in the ſpots. When any one comes near the place where they lurk, it is uſual for them to dart their heads at the perſon's face, by which means they often wound them. When the miſchief is done, they get down from the tree as faſt as they can, in order to get away; but as they are ſlow in their motion they may be ſoon overtaken and knocked on the head. They do not leap from the tree,

tree, but get down by winding along the branches. Many of theſe are put in ſpirits, and ſent by the *Dutch* to *Holland* as a preſent to their friends.

The BLIND SERPENT is very common at the Cape of *Good Hope*, and his ſcales are black, with brown, white and red ſpots. Its bite is not ſo dangerous as that of other Serpents, and is often found in the clefts of rocks and other places about them, where they may be killed with little trouble.

The DIPSAS is ſo called from the *Greek* word, which ſignifies thirſt, becauſe thoſe who have the misfortune to be bit by it have always a paſſionate deſire for drink. Some call it Preſter, which ſignifies to burn, on account of the burning ſenſation that it cauſes. This Serpent is about three quarters of an ell long, and is very thick a little below the head, with a blackiſh back. It is very nimble in attacking any perſon; and its bite inflames the blood to ſuch a degree, that it cauſes a burning thirſt.

The CHAYQUARONA is a *Braſilian* Serpent, whoſe male is adorned with rings from the head, which are handſome, to the extremity of the tail. On each ſide the neck there are nine black ſpots, which look like eyes, as in ſome kind of Lampreys; ſome of the rings are red, and others of a pale yellow, and the ſcales of the lower belly are of a faint blue. The female is like the male, only the rings are of four colours, and there are no ſpots on the ſides of the neck.

The HORNED SNAKES are like the Rattle-Snakes for colour, but rather lighter. They hiſs exactly like a Gooſe when any animal comes near them. They ſtrike at their enemy with their tail, which is armed at the end with a horny ſubſtance like a cock's ſpur; which being venomous, generally kills thoſe that are ſtruck with it.

The WATER SNAKES, of *Carolina*, are of four ſorts; the firſt is of the colour of the Horn Snake, but ſomewhat leſs; the next is a very long one of a different colour, and will ſwim over a river a league in breadth. They generally hang upon birch, and other trees, near the water ſide. Their bite is reckoned venomous. The third ſort, is of the colour of an *Engliſh*

Viper, and delights in places where there is ſalt water. The bite is accounted dangerous, but whether deadly or not, is not ſaid. The laſt kind is of a black colour, and frequents ponds and ditches, which is all that authors ſay of it.

The SWAMP SNAKES are very near akin to the Water Snakes, and may properly be ranked in that number. The belly of the firſt is of a carnation or pink colour, and its back of a dirty brown; they are of a large ſize, but not very venomous. The ſecond ſort is large, of a dirty brown colour, and continues always in the marſhes. The laſt is mottled, and very poiſonous, with prodigious wide mouths. They grow to the thickneſs of the calf of a man's leg, and frequent the ſides of ſwamps and ponds.

The RED BELLIED LAND SNAKE is ſo called, on account of the colour of its belly, which is nearly that of an orange. Some have been bitten by theſe Snakes without any bad conſequence, while others have ſuffered greatly on that account.

The RED BACKED SNAKES are ſo called from the colour of the back. They are long and ſlender, and their bite is ſo fatal as to admit no cure. However they are happily very uncommon.

The BLACK TRUNCHEON SNAKE lies under the roots of trees, and on the banks of rivers. When any thing diſturbs them, they dart into the water like an arrow out of a bow. They are ſo called from their ſhape, for they are very thick and ſhort.

The LAMANDA, or the KING OF SERPENTS, ſo called by *Seba*, is a native of the iſland of *Java*. It is ſo curiouſly coloured and ſpotted, that a very ſkilful painter whom he employed, could not come up to the beauty of the original. The head is well proportioned, and the forehead is of a yellowiſh aſh-colour, covered with ſcales, marked with a red croſs made like the iron part of a halberd; and near it are two annular ſpots, which ſurround others that are ſmaller. From the eyes, which are lively and ſparkling, to the nape of the neck, there runs along the ſide of the upper jaw a bay-brown variegated ſtreak; and the lower jaw is encircled underneath with another of the ſame colour. The hinder

part

part of the head is finely ſpotted, and the mouth is armed with ſharp crooked teeth. The upper part of the body is very beautiful, for it ſeems to be painted with coats of arms, and crowns of different ſhapes, ſo interwoven with each other, that any one would imagine they were the work of ſome curious painter. The ſcales are like lozenges of various colours, and the tail is adorned with a ſingular orange-coloured ſpot. The tranſverſe ſcales are of an Iſabella colour, that is between white and yellow, and beautifully marked with blackiſh ſpots of different ſizes. This Serpent is about ſeven feet and a half long, but the thickneſs is not proportionable to the length.

The MANBALLA, a Serpent of *Ceylon*, is of a cheſtnut colour, and the head is like that of a hound: the upper part of the body is covered with pale yellow ſcales, and thoſe on the forehead and jaws are of a deep red. The whole extent of the back, which is ſmooth and highly poliſhed, is marked with oval links, which are joined together by a large ſpot or ſtreak; under this ſtreak the links are of a triangular form, inclining to a pale red, and run uniformly on each ſide of the belly to the beginning of the tail. Towards the extremity of the tail, the colours become more deep, for the bright yellow changes into a deep yellow, and the browniſh red into one the colour of vermillion, with a kind of a black border. The large yellowiſh ſpots, and the upper part of the body, are marked with fleſh coloured ſpecks; the head is large, the neck ſlender, and the tongue long and forked. The mouth is armed with long teeth, the eyes are large and ſparkling, and the ſcales on the belly are of a yellowiſh aſh colour marbled with blackiſh ſpots and other ornaments.

The NINTIPOLONGA is a Serpent of *Ceylon*, which is of a fine marble colour, and has the head adorned with ſmall flowers. The whole body is of a liver colour, marbled with bright aſh colour, and the ſpots are terminated with black edges, only they are of a ſallow colour in ſome places, and very white in others. The forehead is covered with large bright yellow ſcales, diſpoſed in the ſhape of ſmall flowers; and the eyes are large, blue, and ſparkling. The opening of the mouth,

which is armed with ſharp crooked teeth, is defended by a border of thick ſcales. The tongue is white, pretty long, and forked. The tail diminiſhes gradually to a point.

The PETZCOALT is a *Mexican* Serpent, the upper part of whoſe body is yellow, mixed with a little red, and covered with large ſcales like lozenges, which are ſmooth and ſlippery to the touch. The tranſverſe ſcales of the belly are mixed with red and yellow, and the head is defended by large ſtrong ſcales that riſe like lumps. It is about four feet and a half in length, and thick in proportion. Theſe ſorts of Serpents hide themſelves in hollow trees, where they watch for their prey.

The PIMBERAH, according to *Seba*, is a Serpent of *Ceylon*, as thick as a man, and of a proportionable length. It has a terrible aſpect, on account of its two large eyes placed on the top of the head next the ſides. The jaws are armed with teeth cut like a ſaw, and the mouth has a border in the form of a ſhell. The forehead is covered with grey and aſh-coloured ſcales, adorned with large beautiful ſpots, and furrowed acroſs with three ſtreaks, in the ſhape of ſo many croſſes. The ſcales on the upper part of the body are reddiſh, ſhaded with large ſpots of a dark brown, of which ſome are reddiſh, and others oblong, ranged in a fine proportion from the top of the head to the end of the tail, which is ſlender. This variegation is accompanied on the ſides with large triangular black ſpots. Underneath, towards the bottom of the belly, a third row of very ſmall ſpots extend near the tranſverſe ſcales, which are large, of an aſh colour, and diſpoſed in a beautiful order.

The POLONGA is a Serpent of *Ceylon*, according to *Seba*. The head is covered with ſmall thin aſh-coloured ſcales inclining to yellow, and marked with reddiſh ſtreaks. The eyes are ſmall, and the edges of the mouth are bordered with a ſimple lip without ſcales. The jaws are armed with ſharp teeth, and the ſcales on the upper part of the body are adorned with large beautiful ſpots, ſome of which are of a purpliſh brown, and others of a yellowiſh aſh colour, all which are termi-

terminated by a blackiſh border; thoſe on the ſides are brown and quadrangular, with a yellow aſh-coloured ſpeck in the middle. Likewiſe, on the upper part of the body, there are black irregular ſpecks mixed with the ſpots; the yellow aſh-coloured ſcales, that traverſe the belly underneath, are all marked with black ſpots. The tail is one-third part of the whole animal, which grows gradually more ſlender, and becomes inſenſibly of a more reddiſh colour. It is generally ſaid to be very innocent, and is admitted into the houſes of the natives.

The large *Weſt-Indian* Green and Spotted LIZARD is above a foot in length, and the head, legs and ſides, and under part of the body, are of a fine green. The top of the head is covered with broad ſcales, and the ſides and under part of the head with ſmaller. It has a ſort of necklace under the throat, and it thruſts out a black forked tongue from its mouth. The ear holes, which are pretty far behind the eyes, are black. The upper ſide, except the head and tail, is of a dark brown, covered with very ſmall ſcales like ſtuds, and variegated with yellowiſh lines croſſing each other, and forming a kind of net-work. On each ſide, from the fore-legs to the hinder, there are fine blue oval ſpots, each of which is ſurrounded with a duſky-colour. The tail is covered with longiſh ſcales, which run round it in regular rows to its end, which are all of a dark brown with a greeniſh caſt. The belly has broad tranſverſe ſcales running acroſs it, and there are five toes on each foot, with ſmall ſharp nails. The hinder feet ſeem to have a thumb, and four diſtinct fingers.

CHAP. L.

Of Vipers and Serpents from Seba, that have no particular Names.

THOUGH there have been Serpents already deſcribed from *Seba*; yet, as he has many more that are not diſtinguiſhed by any particular names, we

thought it would not be improper to place them in a chapter by themſelves.

The firſt Viper taken notice of, was ſent from the iſland of *Madeira*, and it is repreſented as lying in a bundle of hair. In this ſituation Vipers are commonly found when they are aſleep, with the head ſtretched out and expoſed to the ſun beams. The head is long and flat, and the jaws are placed more backward than ordinary. The upper part of the body is of the colour of lead, and covered with rhomboidal ſcales ſpotted with yellow, ſo as to appear in the form of chains. The ſcales of the belly are of an aſh colour inclining to yellow, but ſhaded here and there with black, like ſome ſort of marble.

The ſecond is an *Eaſt-Indian* Viper, of the iſland of *Java*, otherwiſe called the SNAKE of *Jararaca*. It is all over of a reddiſh brown, variegated with white, and the ſcales are whitiſh, pretty large, and intermixed with a ſmaller ſort, of a red bay colour, and diſpoſed on the back like a chain. The head is large and puffed up, and the eyes are ſo ſparkling, that this Viper has a terrible look. It is generally met with, under the ſhoots of a tree, called the *Horned Acacia*.

The third is a male *Eaſt-Indian* Viper, and has two long teeth or tuſks, which are not very thick, and they are placed in the upper jaw; beſides theſe, the mouth is furniſhed with others that are ſmall, throughout the whole extent of both jaws. The body is remarkably ſpotted, and it is covered with browniſh ſcales, diſpoſed in a beautiful order, and ſpeckled with ſpots, the largeſt of which join each other, and, as it were, creep along to the end of the tail.

The fourth is a Viper of *Surinam*, which is all over ſcales, and every part of the ſkin is hid by ſmall reddiſh ſcales.

The fifth is an *American* VIPER, beautifully ſpotted, and the back is variegated with a mixture of white paliſh red and black. The belly is of a bright aſh colour, and the eyes are lively. The head is pretty large, but compreſſed, and the nape of the neck is marbled with ſpots, which are either white or inclining to red. The fore-

forehead is covered with large greyiſh ſcales; but the tail is not ſo pointed as in other Vipers.

The ſixth is a male *American* VIPER, ſent from the iſland of *Euſtachia*. The colour is reddiſh, and a chain runs throughout the length of the body, conſiſting of ſmall links with four points, and marked in the middle with an oval ſpot. The mouth is full of ſmall teeth, as in other Vipers.

The ſeventh is a female VIPER, ſent from the iſland of *Euſtachia*, and yet of a different kind from the former; for it does not only differ in colour, and in the ſpots, but the head is in the ſhape of that of a calf, and very large on the back part. The mouth is larger, but the neck more ſlender, which might ſeem to render the ſwallowing difficult; and yet it is able to ſwallow frogs, toads, and lizards. The upper part of the body is covered with reddiſh ſcales, and there is a chain of a bay brown colour.

The eighth is a female VIPER of the iſland of *Saint Euſtachia*. The mouth and head are pretty large; the colour is yellow about the neck, and on the nape there are two black ſpots: the body is covered with large reddiſh ſcales; acroſs which, on the back, there are green ones that ſhine like ſattin. The belly is of a paliſh yellow, ſhaded with black ſpots, which are extended in the ſhape of little flames.

The ninth is another female VIPER, from the iſland of *Euſtachia*, which is not leſs beautiful than the former. The ſcales on the upper part of the body are of a lively blue, and each of them are marked with a whitiſh ſpot; but the belly and the ſcales that croſs it fillemot. The head is made like that of the former, only it is covered with large blue ſcales.

The tenth is a female VIPER of the iſle of *Ceylon*, which has a large flattiſh noſe, and a terrible look. Its colouring is very fine, conſiſting of white, cheſtnut colour, and reddiſh, curiouſly diverſified. The head is large, as well as the mouth; and it makes a noiſe, like the voice of one that is ſinging. It has two rattles at the end of the tail, which may be heard at ſome diſtance, and ſerve as a warning for perſons to keep out of the way. It lies concealed among the plants and trees

of open foreſts. This ſeems to be like the *American* Rattle Snake.

The eleventh is another VIPER of the iſle of *Ceylon*, of a very beautiful kind. It is covered from the head to the extremity of the pointed tail, with ſmall yellow and red ſcales, waved every where with dark brown ſpots. The head ſeems to be gilded, and is covered with very large ſcales, in proportion to thoſe of the body.

The twelfth is a beautiful VIPER of *Antycira*, whoſe back is marked with annular ſpots, which run tranſverſely, and are placed ſeparately. They are of a ſtraw colour, with bay brown edges; but on the ſides of the belly, they join other black, or rather cheſtnut coloured ſpots, variegated with yelloviſh rays, made like a creſcent. The forehead is of an oblong ſhape, covered with ſmall thin ſcales of a ſaffron colour, reddiſh on the edges; they are divided, in the middle of the forehead, by a cheſtnut coloured ray, that extends to the noſe; but the jaws and the neck are of a bright yellow. The other ſcales on the body are of a browniſh aſh colour, mixed with yellow; but thoſe on the belly are as white as ſnow.

The thirteenth is a VIPER from *Japan*, marked as it were with a ſort of characters not unlike the Hebrew letters. The ſpots are of a pale yellow edged with a bright cheſtnut colour. They run from the hinder part of the neck to the end of the tail, eſpecially on the upper part of the body, which is covered with reddiſh ſcales. The head is adorned with pretty ſmall ſcales, ſomewhat variegated. Thoſe under the belly, that run croſs ways, are of a yelloviſh aſh colour, ſpeckled with red.

The fourteenth is the HORNED VIPER of *Sclavonia*, taken on the ſhore of the *Gulf of Venice*, and is a kind of Ceraſtes. This Viper is curiouſly ſpotted, and has a head like a maſtiff dog. The jaws are thick and broad and the mouth wide, with teeth that are extremely ſharp. The noſtrils are very open, and the forehead is but ſmall, though it is marked with a croſs that looks like jewels, in the middle of which there is a round ſpot.

The

The fifteenth is the *Virginian* VIPER, marked with purple ſpots, and along the back there is a large purple ſpot, with other large and ſmall ones of the ſame colour. The ſcales of the body are of a bright aſh colour, and thoſe of the belly of a faintiſh yellow.

The ſixteenth is a VIPER of *Paraguay*, of an extraordinary beauty. The garment is ſo rich, if it may be ſo called, that it is impoſſible to deſcribe it properly. Throughout the whole length of the back, there is a remarkable mixture of great and ſmall cheſtnut coloured ſpots, ſhaded with bright purple, and whitiſh aſh colour, in the form of chains, placed end to end. The head is adorned with thin ſmall ſcales of ſeveral colours, placed in compartments with wonderful ſkill. The eyes are ſmall, and the noſe is marked with a white ſpot. The jaws are large, and the neck ſlender, roundiſh and flat. The body is very long, the ſkin ſhining, and the tranſverſe ſcales finely variegated.

The common SERPENT of *Germany*, according to *Seba*, has blueiſh ſcales on the back, ſpotted with black, as well as the large tranſverſe ſcales of the belly. There is a large yellow ring or collar about the neck, marked with two ſpots that are almoſt black. The ſcales of the head are large, inclining to brown; the upper jaw is bordered with a white ſtreak, ſtriped with black; the teeth are ſmall. When theſe ſort of Serpents have caſt their ſkin, they are clammy, ſhining, ſmooth to the touch, fat, fleſhy, and the females are full of eggs. This Serpent was ſent to *Seba* from *Franckfort* on the *Maine*, from whence they tranſport great numbers to *Holland* every year, where they ſerve for various purpoſes.

There are a great many other Lizards and Serpents mentioned by *Seba*; but, as they are without names, and as we have already deſcribed all that are worth the enquiries of the generality of readers, we ſhall conclude with obſerving, that it would be in vain to attempt aſſigning the uſes of theſe noxious and formidable reptiles. Though the fleſh of the Viper has been converted to ſalutary purpoſes in medicine; yet in the countries where they abound, man is found to ſuffer

more from their baneful qualities, than he is benefited by their medicinal virtues. Providence, however, in ſome meaſure, ſeems to ſecure him from the dangers of thoſe which are moſt fatal: the Rattle Snake, for inſtance, whoſe bite, as we have before obſerved, is fatal, warns him of his vicinity by ſounding his rattles; the moſt formidable avoid his appearance, and ſeldom attack him without ſome kind of previous provocation. In ſome countries, the Serpent kind are even rendered uſeful, and like cats, employed for the purpoſes of deſtroying domeſtic vermin. Without penetrating into the deſigns of Providence, it is ſufficient for us to know, that by granting us ſuch powers ſuperior to all other animals, ſuch of them as we think proper to employ, are rendered entirely ſubſervient to all the purpoſes of our pleaſures or amuſements.

APPENDIX;

Containing the whole Art of

FLOAT AND FLY-FISHING,

The beſt Rules for the

CHOICE OF TACKLE,

And a Deſcription of

NATURAL AND ARTIFICIAL BAITS.

Collected from

PRACTICE AND OBSERVATION,

As well as from the Writings of the

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APPENDIX.

CHAP. I.

Of Angling in general.

THOUGH much has been ſaid by many writers, concerning the antiquity of angling, and in which they have introduced a great deal of fable, we ſhall content ourſelves with mentioning only two authorities, ſuch as cannot be diſputed. It is certain, that angling is much more ancient than the incarnation of our Saviour; for, in the prophet *Amos*, mention is made of fiſh-hooks; and in the Book of *Job*, which was long before the days of *Amos*, mention is alſo made of fiſh-hooks, which muſt imply anglers in thoſe times.

No diverſion is perhaps better calculated to raiſe the mind, to calm and compoſe the troubled paſſions of the ſoul, to inſpire health, content, and eaſe, than that of angling. While the great lawyer is ſwallowed up in buſineſs, and the ſtateſman is preventing or contriving plots, the angler is perhaps ſitting on a bank enamelled with cowſlips, liſtening to the enchanting voices of the little feathered ſongſters, while the ſilver ſtream at his feet with pleaſing murmurs glides gently along. Hunting, as well as many other dangerous diverſions, may have its charms to allure ſome people to the purſuit of it; but

but it cannot be ſo natural as that of angling: the one is all noiſe and tumult, the other peace and ſerenity. The angler leiſurely ſurveys the wonderful works of the creation, and adores that Being, from whom he receives all his pleaſures. His retirement and ſolitude are phyſic for his ſoul, and delivers it from the hurry and various paſſions, in which other purſuits are too much involved. As exerciſe is its neceſſary companion, and a pure and clear air one of its conſtant attendants, health always follows in its train. In ſhort, the various objects, which continually offer themſelves, as ſubjects for the angler's contemplation, inſpire the mind with that innocent chearfulneſs, eaſe, and tranquillity, that is hardly to be expected from any other diverſion, and never to be found amidſt noiſe and tumult.

With reſpect to the qualifications of an angler, Mr. *Markham* in his book entitled *Country Contentments*, ſays, that he ſhould be a good ſcholar, and maſter of the liberal ſciences; as a grammarian, to know how to talk or write of his art in correct language; he ſhould have ſweetneſs of ſpeech, to entice others to delight in an exerciſe ſo laudable; and ſhould have ſtrength of argument, to defend and maintain his profeſſion againſt ridicule and ſlander; he muſt be bold and reſolute, neither to be afraid of ſtorms, nor affrighted at thunder. If he is not poſſeſſed of that excellent virtue, patience, and cannot endure a little faſting, he loſes all the delight which contributes to make this paſtime pleaſing.

CHAP. II.

Of the Angler's Rods and Lines.

THE choice of the angler's ROD is a matter of no ſmall importance. For fiſhing at the bottom, whether with a running line or float, the reed or cane rod is, on account of its lightneſs and elaſticity, to be preferred to the hazel, eſpecially if you angle for thoſe fiſh, which bite but tenderly, as the Roach and Dace: of

of theſe, ſome are put up in the form of a walking ſtick. There are others, which are compoſed of many joints, and put up all together in a bag, and are therefore called bag-roads. Theſe laſt are very uſeful to travel with, as they take up but little room.

Next to theſe is the hazel rod; but that is more apt to warp than the cane. Theſe, as well as excellent fly-rods, are to be had at every fiſhing-tackle ſhop, and therefore need no particular deſcription. Be careful, however, when you beſpeak a rod of reed or cane, that the workman does not raſp down into the bark, which grows round the joints. This is a fault, of which rod-makers are too often guilty, and thereby make the rod weaker at the joints than in any other part; for, there being no bark to repel the wet, it ſoon rots, by which fault you may loſe a good fiſh, and break your rod.

It may not, however, be improper to give ſome directions for making rods, as many anglers live in thoſe parts of the country, where they are not always to be bought.

When the ſap is gone down into the roots of trees, which is generally between the latter end of *November* and *Chriſtmas*, gather the ſtraighteſt hazels you can find, in order to uſe them for ſtocks: theſe, at the larger end, muſt be about an inch, or more, in diameter. At the ſame time, gather ſhoots of a leſs ſize for middle pieces and tops. Tie them together in a bundle, and let them lie on a dry floor.

At the end of fifteen months match them together; and to the ſlender ends of the tops, after cutting off about eight or ten inches, whip a fine taper piece of whalebone of that length. Then cut the ends of the other pieces with a long ſlant, ſo that they may join exactly to each other, and ſpread ſome ſhoemaker's wax very thin over the ſlants: after this, bind them neatly with ſtrong waxed thread. Laſtly, fix a ſtrong loop of horſe-hair to the whalebone, and let the rod, ſo made, lie a week to ſettle before you uſe it. In this manner alſo you may make a fly rod; but obſerve, that the latter muſt be much more ſlender from the end of the ſtock than the former.

To

To make a very neat fly-rod, you muſt proceed in the following manner. Get a yellow whole deal board, which is free from knots; cut off about ſeven feet from the beſt end, and ſaw it into ſquare breadths: let a joiner plain off the angles, and make it perfectly round, a little tapering: this will ſerve for the ſtock. Then piece it to a fine ſtraight hazel, of about ſix feet long, and then a delicate piece of fine-grained yew, plained round like an arrow, and tapering, with whalebone, as before, of about two feet in length. There is no abſolutely fixing the length of a fly-rod; but one of fourteen feet is as long as can well be managed. To colour the ſtock, dip a feather in aqua fortis, and chafe it into the deal, which will then become of a cinnamon colour.

Rods for Barbel, Carp, and other large fiſh, ſhould be of hazel, and proportionably ſtronger than thoſe for Roach and Dace. However, the following portable rod is ſo neat and uſeful, that no angler, who has once tried it, will be without it.

Let there be four joints, made of hiccary, or ſome ſuch very tough wood, and two feet four inches in length. The top muſt be bamboo ſhaved; and the ſtock of aſh, full in the graſp, of an equal length with the other joints, and with a ſtrong ferrel at the ſmaller end, made to receive the large joint, which muſt be well ſhouldered, and fitted to it with the utmoſt exactneſs. This rod will go into a bag, and lie very well concealed in a pocket, in the lining of your coat on the left ſide, made on purpoſe to receive it.

The angler's LINE, whether it be a running-line, or for float-fiſhing, had beſt be of hair, unleſs you fiſh for Barbel, and then it muſt be of ſtrong ſilk; but remember, that the ſingle hair is to be preferred for Roach or Dace fiſhing. The fly line muſt be very ſtrong; and, for the greater facility in throwing, ſhould be eighteen or twenty hairs at the top, diminiſhing gradually to the hook. Lines are ſold at the fiſhing ſhops, which have no joints, but are wove in one piece. But, notwithſtanding this and other improvements, as ſome may perhaps ſtill chuſe to make their own lines, we

ſhall

ſhall endeavour to give ſome directions for that work.

Your hair muſt be round and clear, and free from galls or frets; for a well choſen, even, clear, round hair, of a kind of glaſs-colour, will prove as ſtrong as three that want thoſe perfections. You will ſeldom find a black hair which is not round; but many white ones are flat and uneven; for which reaſon, if you get a lock of round, clear, glaſs-coloured hair, you ought to make much of it.

In making your lines obſerve this rule: firſt let your hair be well waſhed before you ſet about twiſting it; and then chuſe not only the cleareſt hair for it, but ſuch as are of an equal ſize; for then they generally ſtretch and break all together, which hairs of an unequal ſize never do, but break ſingly, and thereby deceive the angler in the ſtrength of his line. When you have twiſted your links, lay them in water for a quarter of an hour at leaſt, and then twiſt them over again before you tie them into a line.

Though many prefer twiſting hairs with the fingers, yet I would rather recommend a little engine for that purpoſe, which is ſold at all the fiſhing tackle ſhops in *London*, with proper directions for uſing it.

When you uſe the fly, you will find it neceſſary to continue your line to a greater degree of fineneſs: in order to which, ſuppoſing your line to be ten yards in length, let your upper link conſiſt of nine or twelve hairs, diminiſhing the number in the ſucceeding links, till you come to the ſize of a fine graſs, and to the end of this fix your hook-link, which ſhould be either of very fine graſs, or ſilk-worm gut. A week's practice will enable a learner to throw out one of theſe lines; and he may lengthen it, by a yard at a time, at the greater end, till he can throw fifteen yards neatly; till when, he is to reckon himſelf but a novice.

As to the colour of your line, you muſt be determined by that of the river in which you fiſh; but I have generally found, that a line of the colour of pepper and ſalt (which is made by mixing a black hair among the white ones in twiſting) will ſuit any water.

Indian

Indian or ſea-graſs makes excellent hook-links; and, though ſome object to it, as being apt to grow brittle and ſnap in uſing, yet with proper management, it is the beſt material for the purpoſe yet known, eſpecially if ordered in the following manner.

Take as many as you pleaſe of the fineſt you can get, put them into any veſſel, and pour therein the ſcummed fat of a pot, wherein freſh (but by no means ſalt) meat has been boiled. When they have lain three or four hours, take them out one by one, and ſtripping the greaſe off with your finger and thumb, ſtretch each graſs as long as it will yield, coil them up in rings, and lay them by. You will then find them become nearly as ſmall, full as round, and much ſtronger, than the beſt ſingle hairs you can get. To preſerve them moiſt, keep them in a piece of bladder well oiled, and, before you uſe them, let them ſoak about half an hour in water, or in your walk to the river ſide, put a length of it into your mouth. If your graſs is coarſe, it will fall heavily on the water, and ſcare away the fiſh; on which account gut has the advantage. After all, if your graſs is fine and round, it is the beſt thing you can uſe.

Silk muſt never be mixed with hair lines; and, though ſilk lines are very apt to rot and break, yet they may ſerve in ſome places, where good hair is not eaſily to be come at. In this caſe a good angler will always make the loweſt part of ſuch lines of the ſmalleſt lute or viol ſtrings.

The next thing to be conſidered is the FLOAT, which, for river fiſhing, ſhould be of cork; but, for ponds and ſtanding waters, quills will do very well, as alſo in ſlow rivers, when you angle near the top with tender baits or paſtes. Let your cork be the fineſt, and free from flaws; bore it through with a ſmall hot iron, and thruſt it on to a fizable quill, after having ſhaped the former with a penknife to the likeneſs of a pyramid, egg, or pear, of a proportionable bigneſs, and finely ſmoothed on a pumice ſtone. Run your line through the quill, and wedge it in with the uppermoſt hard part of the quill, the ſmaller end of the cork being towards the hook, and the bigger towards the rod. Let the

the cork be ſo poiſed with lead on the line, that the quill ſtanding directly upright, the leaſt bite or nibble may ſink the cork.

A cork float, for one hair, muſt be no bigger than a pea; for three, as big as a bean; for ſix, as a ſmall walnut; and for twelve hairs, as big as a *French* walnut.

Quill floats may be bought every where; and, if it chance to be bruiſed or ſplit, ſave the plug, and it will ſerve another. If the water gets in at the top, cover it with ſealing-wax; or if your plug be looſe, take bees-wax bruiſed ſmall, chalk ſcraped fine, and powdered black roſin, of each an equal quantity. Melt them in a ſpoon, and mix them well as they melt, which will be a proper cement to faſten it, by dipping the plug in, and immediately putting it into the float; for it cools as ſoon as ſealing wax.

In chuſing HOOKS, mind that they are ſharp at the point, the beards not broken, of proper length, and the wire well tempered and firm: a ſhort-ſhanked hook is eſteemed beſt.

Thoſe hooks, which are now known by the name of *Kirby*'s hooks, for ſhape and temper, exceed all others. The ſize of your hook muſt be regulated by the fiſh for which you intend to angle. Barbel and Chub require large hooks; Carp, Eels, Tench, Pearch, and Bream, a moderate ſized hook; Smelts, Roach, Dace, and Gudgeons, require a ſmall one. To ſharpen a dull hook, you ſhould carry a whetſtone about two inches long, and a quarter ſquare, that being much better than a file, which rather leaves it rough than ſharp.

CHAP. III.

Of the other Sorts of Tackle neceſſary in Angling.

THE angler, who purſues his ſport at any diſtance from home, muſt be ſupplied with many articles, ſuch as a rod with a ſpare top; lines coiled up, and neatly laid in round flat boxes; ſpare links, ſingle hairs, and waxed thread and ſilk; plummets of various

ſizes,

ſizes, floats of all kinds, and ſpare caps; worm bags, and a gentle box; hooks of all ſizes, and ſome whipped to ſingle hairs; ſhot, ſhoemaker's wax, in a very ſmall gallipot covered with a bit of leather; a clearing ring, a landing net, a ſharp knife, and a pair of ſciſſors. All theſe things, however, may be contained in a wicker panier of about twelve inches wide, and eight high. But let us proceed to examine ſome of the angler's materials more particularly.

The PLUMMET, which is uſed in order to try the depth of the water, in which you intend to angle, ſhould be made of ſheet lead, that, by opening it, you may at any time the more eaſily fix it on the hook without any fear of loſing it.

The LANDING NET muſt be deep, with a round iron rim at top, made to faſten to the end of a long ſtick, in order to land ſuch fiſh, as are too heavy for your tackling. At the other end of the ſtick ſhould be a large hook, which you may thruſt into the mouths of Salmon, and ſuch other fiſh as are too bulky for your net, and by that means bring them ſafe to ſhore.

The CLEARING RING is uſed to diſengage your hook, when it has caught hold of a weed, &c. It muſt be thick and heavy, but not wider than the round part of your hook, and is thus to be uſed. Take off the thick joints of your rod, and ſlip the ring over the remaining ſmall ones, and holding a cord faſtened to the ring, let it fall gently. This, as ſoon as it reaches the hook, will diſengage it, by the aſſiſtance of your gently pulling the cord.

The GORGER is a ſmall piece of cane, of five inches long, and a quarter of an inch wide, with a notch at each end. With this, when a fiſh has gorged your hook, you may, by putting it down his throat till you feel the hook, and holding the line tight while you preſs it down, eaſily diſengage it.

It would be needleſs to give any deſcription of the uſe of knives, ſciſſors, wax, thread, &c. as theſe materials of themſelves explain the various purpoſes they are intended to ſerve.

CHAP. IV.

Of Float Fiſhing, and of Live and Dead Baits.

WITH reſpect to FLOAT FISHING, there are ſome rules, with which the young angler ought to be acquainted. Let the rod be light and ſtiff, and yet ſo ſmart in the ſpring, as to ſtrike at the tip of the whalebone: from fourteen to fifteen feet is a good length for the rod.

In places where you ſometimes meet with Barbel, the line ſhould be ſix or ſeven hairs at top; then diminiſhing gradually for two yards, let the reſt be ſtrong *Indian* graſs, to within about half a yard of the hook, which may be whipped to a fine graſs, or ſilk-worm gut. This line will kill a fiſh of ſix pounds weight.

For mere Roach and Dace fiſhing, accuſtom yourſelf to a ſingle hair, with which an artiſt may kill a fiſh of a pound and a half weight.

For your float, in ſlow ſtreams, a neat round gooſe quill is proper; but for deep or rapid rivers, or in an eddy, the cork, ſhaped like a pear, is indiſputably the beſt, which ſhould not, in general, exceed the ſize of a nutmeg. Let not the quill, which you put through it, be more than half an inch above and below the cork; and this float, though ſome prefer a ſwan's quill, has great advantage over a bare quill; for the quill, being defended from the water by the cork, does not ſoften; and the cork enables you to lead your line ſo heavily, that the hook ſinks almoſt as ſoon as you put it into the water; whereas, when you lead but lightly, it does not get to the bottom till it is near the end of your ſwim. In leading your lines, be careful to balance them ſo nicely, that a very ſmall touch will ſink them. Some uſe, for this purpoſe, lead ſhaped like a barley-corn; but there is nothing better to lead with than ſhot, which you muſt have ready cleft always with you, remembering, that when you fiſh fine, it is better to have on your line a great number of ſmall than a few large ſhot.

Whip

Whip the end of the quill round the plug with fine ſilk, well waxed, which will keep the water out of your float, and preſerve it greatly.

In fiſhing with a float, your line ſhould be about a foot ſhorter than your rod; for, if it is longer, you cannot ſo well command your hook when you come to diſengage the fiſh.

Pearch and Chub are caught with a float, and alſo Gudgeons, and ſometimes Barbel and Grayling. For Carp and Tench, which are ſeldom caught but in ponds, uſe a very ſmall gooſe or duck-quill float; and for ground bait, you may every now and then throw in a bit of chewed bread. For Barbel, you may bait the place, the night before you fiſh, with graves, which are the ſediments of melted tallow, and may be had at the tallow-chandlers: uſe the ſame ground-bait, while you are fiſhing, as for Roach and Dace. In fiſhing with a float for Chub, in warm weather, fiſh at mid-water; in cool weather, lower; and, when it is very cold, at the bottom.

Having thus given ſome neceſſary rules for float fiſhing, we ſhall proceed to a particular deſcription of baits in general for that purpoſe *.

The ASH GRUB is a ſoft, white inſect, found, bent head to tail, under the bark of any decayed aſh, oak, or alder, that has been ſome time felled. It is to be preſerved in bran.

Of BEES, the black ones that breed in clay walls, at the top of the water, and the humble bees, which breed in long graſs, at the bottom, are good baits for the Chub.

BOBS

* The reader muſt not expect to find here an account of what fiſh each particular bait ſuits, that having been already fully mentioned in the former part of this volume. If the angler would know what is the favourite bait of a Salmon, Carp, Trout, or any other river or pond fiſh, he muſt refer to the index at the end of this volume, where he will be directed in what page to find the fiſh for which he intends to angle; and in the note thereon he will be informed, not only of the bait, which is moſt likely to promote his ſport, but alſo of the fiſh's haunts, his time of ſpawning, how to angle for him, and many other particulars neceſſary to be known.

BOBS are of two colours, yellow and red. The former are gathered in the furrows of freſh-ploughed lands; the latter under cow-dung. They are ſummer baits only, and muſt be ſcoured in bran, dry moſs, or meal.

BRANDLINGS are worms uſually found in old dung-hills, or places near them, as alſo in tanners bark, when thrown up in heaps after uſe. They muſt not be put in water above an hour before uſe, and then into fennel for immediate uſe. If you intend them for long keeping, put them into an earthen pot with plenty of moſs, freſh ſhifted every three or four days in ſummer, and every week in winter; or, at leaſt, the moſs muſt be clean waſhed and ſqueezed. The point of the hook muſt be put in at the end of his tail, and run up to the belly, and very near the head, which muſt be left hanging down. Some call this worm by the name of the *Gilt-tail.*

CADEWS, CADIS, or CASE WORMS, are of various ſorts, and in their maggot ſtate thus houſe themſelves: one ſort in ſtraws, called from thence *Straw-Worms*; others in two or more ſticks, laid parallel to one another, creeping at the bottom of brooks; others, with a ſmall bundle of pieces of ruſhes, duck-weed, ſticks, &c. glued together, with which they float on the top, and can row themſelves therein about the water, with the help of their feet; both theſe are called *Cad-Baits.*

All theſe animals have a wonderful faculty in gathering ſuch bodies as are fitteſt for their purpoſe, and then glueing them together, ſome being heavier than water, that the animal may remain at the bottom, where its food is, (for which purpoſe they uſe ſtones, with ſticks, ruſhes, &c.) and ſome being lighter than water, to float on the top, and gather its food from thence. Theſe little houſes look coarſe, and outwardly ſhew no great artifice; but are well ſecured, and made within of a hard tough paſte, into which the hinder part of the maggot is ſo fixed, that it can draw its ſhell after it any where, without danger of leaving it behind, as alſo to thruſt out its body to reach what it wants, or to draw it into its cell, to guard it againſt injuries.

The

The PIPER is a Cadis, whoſe huſk or caſe is a piece of reed, about an inch long and nearly as big round as a ſilver two-pence. Theſe worms, being kept three or four days in a woollen bag, with ſand at the bottom of it, and the bag wet once a day, will in three or four days turn yellow, when they are an excellent bait for the Chub, or indeed for any great fiſh, being a large bait.

There is alſo a ſmaller Cadis worm, called a COCK-SPUR, being in ſhape like the ſpur of a Cock, ſharp at one end, and the caſe or houſe, in which it dwells, is made of ſmall huſks, gravel, and ſlime, in a moſt curious manner, ſo as not to be imitated by the art of man.

There is another Cadis, called by ſome a ROUGH-COAT, whoſe houſe or caſe is made of little pieces of ruſhes, ſtraws, and water-weeds, which are ſo knit together with condenſed ſlime, that they ſtick about the huſk or caſe not unlike the briſtles of a hedge-hog.

Theſe three Cadis are commonly taken in the beginning of ſummer, and are good for any kind of float fiſhing. Theſe at particular times of the year turn into flies; but to purſue this ſubject further, would be leading the young angler into a very difficult purſuit, highly improper upon this occaſion.

DOCK-WORMS are found by plucking up the plants of that name, and waſhing their roots from the earth. In their fibres are little caſes of a red or yellow colour, which upon being opened with a pin, will diſcover the worm; they are kept in bran, like the gentle.

EARTH BOBS, or GRUBS, are the brood of a beetle found in the furrows of freſh ploughed land. Gather a number of them, and put them, with a peck or two of their own earth, into a tub, and cover them from froſt or cold. Thus you may keep them all winter, and kill fiſh with them at all times. Put them into earth and honey a day before uſed, and they will be an excellent bait for Bream or Carp.

GENTLES, or MAGGOTS, are eaſy to be got or bred by putrefaction, and ſcoured well with wheat bran. They are ſometimes added to a worm on the hook,

hook, often to a dub-fly; but oftener by themſelves, two or three on a hook. You may breed and keep them thus. Take a piece of the liver of any beaſt, and, with a croſs ſtick, hang it in ſome corner, over a pot or barrel half full of dry clay; and as they grow big, they will fall into the barrel, where they will ſcour themſelves, and be ready for uſe whenever you want them. In this manner they may be produced till after *Michaelmas*. If you deſire to fiſh with them all the year, get a dead cat or kite, let it be fly blown, and when the gentles begin to ſtir, bury it and them in moiſt earth, but as free from froſt as you can, and you may dig them up whenever you want to uſe them. They will laſt till *March*, when they will turn to flies.

LOB WORMS are found in gardens or in meadow grounds, after rain, by the help of a lanthorn at night. The beſt are thoſe, which have a red head, a ſtreak down the back, and a broad tail. They may be ſcoured in fennel or moſs waſhed clean, wetted, ſqueezed dry, and often changed; but the beſt way is to take a piece of very coarſe cloth, waſhed clean and dried, and then ſoaked in freſh beef liquor, in which there has been no ſalt; wring it, but not too dry; lay it in a broad, deep, glazed earthen pan, and your worms in it, to creep through and ſcour themſelves in. Rinſe it out in the ſame ſort of liquor every two days, and your worms will keep a month, if ſet in a cool place, and be in excellent order. Put what you want for preſent uſe in wetted moſs ſqueezed.

RED WORMS are found in rotten earth, or dung-hills, chiefly of cow or hog's dung; but the beſt are found among tanners bark.

WATER FROGS, which, about *February* or *March*, breed in ditches, are not venomous, and are a good bait for ſome fiſh, Pike in particular. Put the hook through his mouth, and out of one of his gills. Then ſew the upper part of his leg, with only one ſtitch, to the arming wire of your hook, and he will live a long time.

Of SNAILS, the little white one is a bait for the Roach, and the black one ſlit for a Chub.

WASPS, when dried in an oven, or boiled, are good baits.

PASTES are of various ſorts; and, though ſome of them have been mentioned in the former part of this volume, it may not be improper here to bring them into one general view.

Old cheeſe and turpentine, and a bit of fat ruſty bacon, compoſe an excellent bait for the Chub in winter.

Take ſome of the fineſt flour, drop a little milk or water upon it, and work it well in the palm of your hand, till almoſt dry. Then temper it with a ſmall quantity of the fineſt honey, make it into a round ball, and keep it in a moiſt linen cloth, or it will grow dry and hard. If you would have it yellow, mix turmerick with it; if of a fleſh colour, vermilion, and knead it well.

Take ſome old *Cheſhire* cheeſe, the crumb of a *French* roll, and ſome ſheep's kidney-ſuet, beat them in a mortar into a paſte, adding as much clarified honey as will ſoften it. This is excellent for a Chub.

Take Shrimps and Prawns, pull off the ſhells and ſkins, and beat the clear meat in a mortar, with a little honey, till it comes to a paſte: with this cover the point of the hook.

Grate fine bread in a little clear water, in which gum ivy has been ſoaked, and you will find it a good bait for Roach and Dace.

For Carp or Tench, you may mix crumbs of bread with honey, and you will often find it anſwer your wiſh.

With reſpect to the uſe of paſtes, obſerve theſe general rules. Proportion the quantity of paſte you put upon your hook to the ſize of the fiſh, for which you angle. Paſtes muſt not be angled with in rapid ſtreams; but on ſmall hooks, in pits, ponds, lakes, or ſlow-running rivers.

WHEAT. A handful or two of the beſt wheat, boiled in a little milk till ſoft, and fried leiſurely with honey, and a little beaten ſaffron diſſolved in milk, is a good bait for Roach, Dace, Chub, or Grey-ling.

CHAP. V.

Of Fly fiſhing.

FLY FISHING, or fiſhing at the top of the water, is of two ſorts; with a natural and living fly, or with an artificial and made fly.

Of the natural flies, thoſe moſtly in uſe are the *Green-Drake* and the *Stone-fly*, and theſe in the two months of *May* and *June* only; but there are others, of which, as well as of theſe, we ſhall give a ſhort hiſtory at the end of this chapter.

Theſe are to be uſed with a ſhort line, not more than half the length of your rod, if the wind is ſtill; but, if you have a wind that will carry it from you, it may then be longer. This way of fiſhing is called *Dapping*, *Dabbling*, or *Dibbling*, wherein you are always to have your line flying before you up or down the river, as the wind ſerves, and to angle as near as you can to the bank of the ſame ſide on which you ſtand; though, when you ſee a fiſh riſe near you, you may guide your fly over him, whether in the middle, or on the contrary ſide, and if you are pretty well out of ſight, either by kneeling, or the interpoſition of a bank or buſh, you will be always ſure to take him, provided you are quick in your motions: your fiſh may otherwiſe remove to ſome other place, if it be in the ſtill deeps, where he is always in motion, and roving up and down for prey; but in a ſtream you may generally, eſpecially if there is a large ſtone near, find him in the ſame place. Your line, in this caſe, ought to be of three good hairs next your hook; becauſe, in this kind of angling you are to expect the largeſt fiſh, and that, wanting length to give him line after he is ſtruck, you muſt be forced to tug for it. However, not an inch of your line being ſuffered to touch the water in dibbling, it may be allowed to be ſtronger on that account.

We come now to the ſecond way of angling at the top of the water, which is with an artificial fly. In this kind of ſport, you are to angle with a line longer

by a yard and a half, and ſometimes two yards, than your rod; and with both this and the other, in a calm day in the ſtreams, in a breeze that curls the water in the ſtill deeps, you are likely to ſtrike the beſt fiſh.

For the length of your rod, you are always to be determined by the breadth of the river in which you intend to angle. For a Trout river, one of five or ſix yards is long enough. If it is longer, be it ever ſo neatly and artificially made, it will ſoon become tireſome, and change your ſport into toil and labour.

The length of the line, to a man that knows how to handle his rod, and caſt it properly, is no manner of incumbrance, excepting in woody places, and in landing of a fiſh, which every one, who can afford to angle for pleaſure, has ſomebody to do for him; and the length of line is a great advantage in fiſhing at a diſtance: to fiſh fine, and far off, is a principal matter in Trout angling.

Your line in this caſe ſhould never be leſs, nor ever exceed two hairs next the hook; for one, whatever ſome may pretend, is not ſufficient, as the leaſt accident, even with the fineſt hand, may break it. However, he that cannot kill a Trout of twenty inches long with two hairs, in a river clear of wood and weeds, deſerves not the name of an angler.

To have your whole line as it ought to be, two of the firſt lengths, neareſt the hook, ſhould be of two hairs each, the next three lengths above them of three, the next three above them of four, and ſo of five, ſix and ſeven, to the very top; by which means your rod and tackle will, in a manner, be taper from your very hand to your hook, your line will fall much better and ſtraighter, and caſt the fly to any certain place, to which the hand and eye ſhall direct it, with leſs weight and violence, which would otherwiſe circle the water, and fright away the fiſh.

In caſting your line, do it always before you, and in ſuch a manner, that your fly may firſt fall upon the water, and as little of your line with it as poſſible; though, if the wind be very briſk, you will then of neceſſity be obliged to ſink part of your line to keep

keep your fly in the water. In caſting your fly you muſt aim at the further, or nearer bank, as the wind ſerves your purpoſe, which will be with and againſt you ſeveral times, on the ſame ſide, in an hour, as the river winds in its courſe, and you will be forced to angle up and down by turns accordingly; but you muſt endeavour, as much as you can, to have the wind on your back, and always be ſure to ſtand as far off the bank as your length of line will give you leave, when you throw to the contrary ſide. When the wind will not permit you ſo to do, and that you are forced to angle on the ſame ſide on which you ſtand, you muſt then go to the very brink of the river, and caſt your fly, at the utmoſt length of your rod and line, up or down the river, as the gale ſerves.

Having now done with both ways of fiſhing at the top of the water, and the length of your rod and line for thoſe purpoſes, we ſhall proceed to mention what materials the angler ſhould be ſupplied with, in order to make artificial flies. As to the making them, many writers on angling have attempted to give directions for that purpoſe; but it is certain, if the angler is ſupplied with proper materials, and has the opportunity of ſeeing expert artiſts make flies, he will learn more from one week's practice and obſervation, than he poſſibly can in a twelvemonth from the peruſal of any book that was ever wrote on that ſubject.

Firſt you muſt be provided with bear's hair of different colours, as grey, dun, light, and dark-coloured, bright brown, and that which ſhines. Alſo camel's hair, dark, light, and of a colour between both. Badger's hair, or fur. Spaniel's hair from behind the ear, light and dark-brown, blackiſh and black. Hog's down, which may be had about *Chriſtmas* of butchers, or rather of thoſe that make brawn: it ſhould be plucked from under the throat, and other ſoft places of the hog. Theſe ſhould be either black, red, whitiſh, or ſandy. If you want them of any other colour, you may ſend them to the dyer's.

Seal's fur is to be had at the trunkmakers. This you may get dyed of the colour of calves and cows hair, in all the different ſhades, from the lighteſt to

the darkeſt brown. You will then never need cows or calves hair, both which are harſh, and will never work kindly, nor lay handſomely.

Get alſo mohairs, black, blue, purple, white, and violet; camlets, both hair and worſted, blue, yellow, dun, light and dark-brown, red, violet, purple, black, pink, and orange colours.

A piece of an old Turkey carpet will furniſh excellent dubbing: untwiſt the yarn, and pick out the wool, carefully ſeparating the different colours, and lay it by.

Get alſo furs of the following animals, *viz.* the ſquirrel, particularly from his tail, fox cub, from the tail where it is downy, and of an aſh-colour; an old fox, an old otter, a hare, from the neck, where it is of the colour of withered fern; and above all, the yellow fur of the martern, from off the gills or ſpots under the jaws. All theſe, and almoſt every other kind of fur, are eaſily got at the furriers.

Hackles are a very important article in fly-making. Theſe are the long ſlender feathers, which hang from the head of a cock down his neck. Fine ones may be alſo taken from near his tail; but be careful that they are not too rank, which they always are when the fibres are more than half an inch long. Be provided with theſe of the following colours, red, dun, yellowiſh, white, orange, and perfect black; and whenever you meet, alive or dead, with a cock of the game breed, whoſe hackle is of a ſtrong brown red, never fail to buy him. Obſerve, however, that the feathers of a cock chicken, be they ever ſo fine for ſhape and colour, are good for little; for they are too downy and weak to ſtand erect after they are once wet; and ſo are thoſe of the Bantam cock.

Feathers are abſolutely neceſſary for the wings, and other parts of flies: get therefore feathers from the hack and other parts of the wild mallard or drake; the feathers of a partridge, eſpecially thoſe red ones that are in the tail; feathers from a cock pheaſant's breaſt and tail; the wings of a blackbird, a ſterling, a jay, a fieldfare, and a water-coot; feathers from the crown of the pewit, plover, or lapwing, and feathers from a heron's neck and wings.

Be

Be provided with marking ſilk of all colours, fine, but very ſtrong; gold and ſilver flatted wire or twiſt, a ſharp knife, hooks of all ſizes, hog's briſtles for loops to your flies, ſhoemaker's wax, &c.

Remember, with all your dubbing, to mix bear's hairs and hog's wool, which are ſtiff, and not apt to imbibe the water, as the fine furs, and moſt other kinds of dubbings do; and remember alſo, that marterns fur is the beſt yellow you can uſe.

The angler, who poſſeſſes theſe materials, and obſerves the manner in which ſkilful fly makers uſe them, will ſoon be enabled to form any fly whatever; for this art, like every other, is to be acquired only by practice. We might form an entire volume of nothing but liſts of artificial flies for the uſe of every month in the year, which, inſtead of improving the young angler, would only contribute to diſhearten and perplex him; we ſhall therefore content ourſelves with mentioning only the twelve following.

1. The DUN FLY in *March*: the body is made of dun wool, and the wings of the partridge's feathers.

2. Another DUN FLY, the body of which is made of black wool, and the wings of the black drake's feathers, particularly thoſe under his tail.

3. The STONE FLY, in *April*, whoſe body is made of black wool, coloured with yellow under the wings and tail. For this fly you muſt uſe the wings of the drake.

4. The RUDDY FLY, in the beginning of *May*. Make his body of red wool wrapt about with black ſilk. The feathers to be uſed are the wings of the drake, and the feathers of a red Capon, which hang down on his ſides next to the tail.

5. The YELLOW or GREENISH FLY, in *May*. Make the body of yellow wool, and the wings of the red cock's hackle or tail.

6. The BLACK FLY, in *May*, whoſe body may be made of black wool: the wings are made of thoſe of a brown capon.

7. The YELLOW FLY, in *June*. His body is made of black wool, with a yellow liſt on each ſide, The wings ſhould be formed of feathers taken from the wings of a buzzard, bound with black hemp.

8. The MOORISH FLY, whoſe body is made with darkiſh wool, and the wings of the ſame coloured mail of the drake.

9. The TAWNY FLY, which is good till the middle of *June*. The body is made of tawny wool, and the wings of the whitiſh mail of the wild drake.

10. The WASP-FLY, in *July*. Make his body of black wool wrapped about with yellow ſilk: the wings muſt be made of the feathers of the drake or buzzard.

11. The SHELL FLY, which is uſeful in the middle of *July*. The body is made of greeniſh wool, wrapped about with the hurle of a peacock's tail, and the wings with feathers from thoſe of a buzzard.

12. The DARK DRAKE-FLY, which is good in *Auguſt*. The body is made with black wool, wrapped about with black ſilk. His wings are made with the mail of the black drake, with a black head.

Having ſaid thus much of artificial fly-making, it may not be improper to give the young angler a ſhort account of a few of the moſt material natural flies, in imitating which he may employ himſelf at home, when the weather will not permit him to purſue his ſport abroad; and he may be aſſured, that, in collecting and arranging the materials, and imitating the various ſhapes and colours of theſe admirable creatures, he will ſoon find little leſs pleaſure than even in catching fiſh.

The GREEN DRAKE FLY comes in about the middle of *May*; but are never properly fit for uſe till the end of that month, or the beginning of *June*, though they are ſooner or later, according to the ſeaſon of the year.

The STONE FLY comes much ſooner, ſo early as the middle of *April*, but is not properly in ſeaſon till the middle of *May*. He continues to kill much longer than the green drake remains with us, even ſo long as almoſt to the end of *June*.

Both

Both theſe flies, and perhaps many others, are certainly bred in the very rivers where they are taken. Our cadis, which lie under ſtones in the bottom of the water, turn into theſe two flies; and, being taken in their huſk near the time of their maturity, are very eaſily known and diſtinguiſhed, being the largeſt of all others.

The green drake never diſcloſes from his huſk till he is there firſt grown to full maturity, body, wings, and all; and then he creeps out of his cell, but with his wings ſo cramped and ruffled, by being preſſed together in ſo narrow a compaſs, that they are, for ſome hours, totally uſeleſs to him. Hence he is compelled either to creep upon the flags, ſedges, and blades of graſs, if his firſt riſing from the bottom of the water be near the banks of the river, till the air and ſun ſtiffen and ſmooth them. If his firſt appearance above water happens to be in the middle of it, he then lies upon the ſurface of the water: for his feet are totally uſeleſs to him there, as he cannot, like the ſtone fly, creep upon the water, until his wings have acquired the neceſſary ſtiffneſs. In the mean time, it is a chance, if he does not fall a prey to ſome Trout or Grayling. If he eſcapes theſe fiſh, his wings ſoon get ſtrength, which ſtand on his back like thoſe of a butterfly, and his motion in flying is the ſame.

The body of this fly is, in ſome, of a paler, in others, of a darker yellow; for they are not in all exactly of a colour. They are ribbed with rows of green, long, ſlender, and growing ſharp towards the tail, at the end of which they have three ſmall whiſks of a very dark colour, almoſt black, and their tails turn up towards their back like a mallard, from whence undoubtedly they have the name of Green Drake.

With theſe the angler muſt dibble; and, having gathered a ſufficient quantity of them into a draw-box, with holes in the cover to give them air, where they will continue vigorous and freſh a night or two, he may take them out thence by the wings, and bait them upon the hook in the following manner.

Firſt take out one, (for you muſt fiſh with two of them at a time) and, putting the point of the hook

into the thickeſt part of his body under one of his wings, run it directly through, and out at the other ſide, leaving him ſpitted croſs upon the hook. Then, taking the other, put him on after the ſame manner; but with his head the contrary way. In this poſture they will live upon the hook, and play with their wings for more than a quarter of an hour. You muſt take care to keep their wings dry in playing them on the water, and that your fingers are not wet when you take them out to bait them; for then your bait will be ſpoiled.

With repect to this fly, it remains only to acquaint the angler, that it is taken at any time of the day.

We muſt now be a little more particular concerning the ſtone fly, which has not the patience to continue in his cruſt or huſk till his wings are full grown; but, as ſoon as they begin to put themſelves out, he feels himſelf ſtrong, ſqueezes himſelf out of his priſon, and crawls to the top of ſome ſtone, where, if he can find a chink that will receive him, or can creep between two ſtones, the one lying hollow upon the other, he there lurks till his wings are full grown: that is your only place to find him, and from thence he undoubtedly derives his name. For want of ſuch a convenience, he will make ſhift with the hollow of a bank, or any other place, where the wind cannot come at him to force him away.

His body is long, and pretty thick, and almoſt as broad at the tail as in the middle. His colours are a very fine brown, ribbed with yellow, and much yellower on the belly than the back. He has alſo two or three whiſks at the tag of his tail, and two little horns upon his head. His wings, when full grown, are double, and flat down his back, of the ſame colour, though rather darker than his body, and alſo longer. He makes but little uſe of his wings; for he is ſeldom ſeen flying, though often ſwimming and padling in the water with the ſeveral feet he has under his belly, without ſtirring a wing: whereas the drake will mount ſteeple high into the air, though he is to be found every where high and low near the river.

The ſtone fly is to be uſed much in the ſame manner as before directed for the drake; but the Trout is found to take the latter more greedily than the former.

The LITTLE YELLOW *MAY* FLY is in ſhape exactly as the green drake; but is very little, and of as bright a yellow as can be ſeen.

The CAMLET FLY is in ſhape like a moth, with fine watered wings, and is an excellent bait for the Grayling. This fly, though it comes in *May*, continues all the month of *June*.

The PALMER FLY is a caterpillar or worm, which never continues long in one ſtate, though their colours are very elegant and beautiful. The following is a deſcription of one of them in their moſt brilliant dreſs. His lips and mouth are a little yellow, his eyes black as jet, his forehead purple, his feet and hinder parts green, his tail two-forked and black, the whole body ſtained with a kind of red ſpots, which run along the neck and ſhoulder blade, not unlike the form of a *St. Andrew*'s croſs, and a white line drawn down his back to his tail. At a fixed age, this caterpillar ceaſes to eat, and towards winter is covered over with a ſtrange ſhell or cruſt, called an *Aurelia*, and in that manner remains in a ſtate of total inaction during the whole winter; but, in the ſpring following, he commences a painted butterfly. To purſue this curious inſect through all its various changes would be uſeleſs here, as it is ſufficiently deſcribed in other parts of this work.

The OAK FLY is alſo known by the name of the ASH FLY and the WOODCOCK FLY. *Bowkler*, in his *Art of Angling*, ſays, "This fly, as I have lately been informed by a gentleman of veracity, is bred in thoſe little balls, which grow on the boughs of large oaks, commonly called oak apples, which he accidentally diſcovered by opening ſeveral of theſe balls, which had been gathered in the winter, and brought into the houſe. In each of them he found a fly, ſome of which, being enlivened by the warmth of the room, immediately took flight, and fixed in the window, with the head downwards, the poſition they obſerve on the trees."

This fly is found on the body of an oak or aſh, from the beginning of *May* to the end of *Auguſt*. It is of a brown colour, and is eaſily taken.

The ANT FLY is often found in *June*, tho' it is in its higheſt perfection in *July*, and laſts till *Auguſt* and *September*. They muſt be taken from their hills, with a handful of their earth and roots of the graſs about them, and put all together in a large glaſs bottle. If they are not bruiſed in taking, nor their wings hurt, they will live above a month. If you would keep them longer, put them into a barrel, firſt waſhing it with honey and water. They are very good baits for Roach, Dace, or Chub, fiſhing near the ground.

CHAP. VI.

Of Rock Angling, Night Angling, &c.

ROCK-fiſhing is practiſed chiefly in the *South* and *South-Weſt* parts of *England*, and in ſome parts of *Ireland*. When you fiſh from rocks, your line muſt be very ſtrong, and conſiſt at leaſt of five or ſix hairs in a link. A float is neceſſary, and two hooks, one to reach the bottom, and the other to keep in mid-water. The beſt time for this ſport is, when the tide is half ſpent; and till within two hours of high water. Morning and evening are the moſt preferable times, if the tide anſwers. The cockle, lob, and marſh-worms are the general baits uſed, and a hairy worm found on the ſea ſhore. The prizes of this fiſhing are only Sea Bream, Flounders, Whiting-pollock, and Rock-Whitings.

With reſpect to NIGHT ANGLING, few other fiſh are taken at that time but Trout and Eels. In the night, the beſt Trout come out of their holes, when they are taken on the top of the water with a great lob or garden worm, or rather two, which you are to fiſh with in a place, where the water runs quietly; for in a ſtream the bait will not be ſo well diſcerned.

In a dead place, near a current, draw your bait over the top of the water, backwards and forwards, and, if there is a Trout in the hole, he will take it, eſpecially if the night is dark; for then he is bold, and lies near the top of the water, watching the motion of every frog, or any thing elſe, that ſwims between him and the ſky. He hunts after his prey, if he ſees the water but wrinkle, or move in one of theſe dead holes, where the large old Trouts uſually lie, near to their holds; for he is both ſubtil and fearful, and does not uſually ſtir out of his hole, but lies in it as cloſe in the day, as the timorous hare does in her form. The chief feeding of either is ſeldom in the day, but uſually in the night, and then the large Trout feed very boldly.

You muſt fiſh for him with a ſtrong line and a large hook, and let him have time to bite; for he does not uſually forſake the hook at night, though he does frequently in the day. If the night is not dark, you muſt in that caſe fiſh with an artificial fly of a light colour, and at the ſnap; indeed, in the night, he will riſe at almoſt any thing.

Night angling is not, however, to be recommended, as it is in ſome meaſure dangerous, and very unwholeſome.

The ſafeſt method of catching fiſh by night, particularly Eels, is by lines left in the water from the evening till the next morning. For this purpoſe, your line muſt be fifteen or twenty yards long, according to the width of the place in which you intend to throw it. To this, at equal diſtances, tie five or ſix hempen lines, of a moderate thickneſs. To each of theſe whip a hook, and bait with a Minnow, or any ſmall fiſh; but, if they are not to be had, you may make uſe of a large lob-worm, or even a piece of beef. If you bait with a fiſh, put the point of the hook in at the tail, and out at the mouth, and cover the point of the hook with a ſmall worm. At the hook end of the cord, faſten a weight about two pounds, and throw it acroſs the river into ſome ſtill deep, or at the tail or ſide of a deep current, firſt taking care, however, to faſten the other end of the line round a tree, or to ſome other ſecure place.

When

When you go in the morning, it will be a chance if you do not find fiſh enſnared on the hooks.

There are other methods of catching fiſh, ſuch as bobbing, dabbing, ſniggling, ſnapping, trolling, and fiſhing at hand. Of the three firſt, we have already made mention in the preceding part of this volume; we ſhall now proceed to deſcribe the three laſt.

SNAPPING is a method of catching Pike with a rod ſixteen or ſeventeen feet long, a ſtout whalebone top, as thick as the upper part of your little finger, and a ſtrong line not quite ſo long as your rod. The ſnap-hook may be thus made. When it is to be placed at the end of your line, take twelve inches of gimp, and two large Salmon hooks, and turn them back to back. In the middle place the gimp, and whip them together with ſilk well waxed: then place a Pearch hook between the other two, and faſten it towards the upper part of the ſhanks with waxed ſilk. At about eighteen inches from the bottom of your line, put on a large float of cork, and under it as much lead as will poiſe it. Fix your bait to the ſmall hook, by running it under the back fin, (the beſt are Gudgeons, Dace, and ſmall Roach) and let it ſwim down the current. When your float is drawn under water, give a ſtrong jerk, and when you find you have hooked your fiſh, play him properly, and uſe the landing net.

TROLLING differs from ſnapping, in this, that the head of the bait fiſh muſt be at the bent of the hook, and that you muſt give the fiſh time to pouch or ſwallow the bait. Trolling hooks, which differ much from thoſe for the ſnap, are to be bought ready made at the tackle ſhops, and therefore need no deſcription.

ANGLING BY HAND is of three ſorts, which we ſhall proceed to deſcribe ſeparately.

The firſt, with a line about half the length of the rod, a good weighty plumb, and three hairs next the hook, which is called a *Running Line*, and with one large brandling, or a dew worm of a moderate ſize, indeed, with almoſt any worm whatever; for, if a Trout is in the humour to bite, there is hardly any worm he will refuſe. If you fiſh with two worms,

you

you are then thus to bait your hook. Firſt run the point of your hook in at the very head of your firſt worm, and ſo down through his body till it be paſt the knot, and then let it out. Slip the worm above the arming, that you may not bruiſe it with your finger till you have put on the other, by running the point of the hook in below the knot, and upwards through his body towards his head, till it be juſt covered with the head, which being done, you are then to ſlip the firſt worm down over the arming again, till the knots of both worms meet together.

The ſecond way of angling by hand, and with a running line, is with a line ſomething longer than the former, and with tackle made in this manner. At the extremity of your line, where the hook is always placed in all other methods of angling, you are to have a large muſket bullet, into which the end of your line is to be faſtened with a peg or pin even and cloſe with the bullet. About half a foot above that, muſt be a branch of line, of about half a yard long for a ſwift ſtream, with a hook at the end, baited with worms; and, at about half a foot above that, another branch of line, armed and baited after the ſame manner, but with another ſort of worm. Both theſe ways of angling at the bottom are moſt proper for a dark and muddy water, becauſe, in ſuch a condition of the ſtream, a man may ſtand as near as he will, and neither his own ſhadow, or that of his tackle, will hinder his ſport.

The third way of angling by hand, with a ground bait, and by much the beſt of all others, is with a line full as long, or a yard and a half longer than your rod, with no more than one hair next your hook, and for two or three lengths above it. There muſt be no more than one ſmall pellet for your plumb, your hook little, your worms of the ſmaller brandlings well ſcoured, and only one upon your hook at a time, which is thus to be baited. The point of your hook is to be put in at the tag of his tail, and run up his body quite over all the arming, and ſtill ſtripped on an inch at leaſt upon the hair, the head and remaining part hanging downwards. With this line and hook thus baited, you are to angle

in the ſtreams, always in a clear, rather than a troubled water, always up the river, throwing out your worm before you, with a light one-handed rod, like an artificial fly, where it will be taken, ſometimes at the top, or within a very little of the ſurface of the water, and almoſt always before the light plumb can ſink it to the bottom. Provided the rod is light and pliant, and true and finely made, a ſkilful hand will do wonders; and in a clear ſtream, it is undoubtedly the beſt method of angling for a Trout or Grayling.

CHAP. VII.

Containing ſome Particulars not generally known by young Anglers.

THERE are particular methods of making baits more agreeable to fiſh than what are commonly practiſed; and, though the uſe of oils, ointments, &c. are by many anglers treated with contempt, it is nevertheleſs certain, from repeated experiments, that the following have been known to contribute greatly to the ſport, at the very time, and on the ſame ſpot, when others, who deſpiſed the uſe of them, could catch nothing.

Anoint a little box with two or three drops of the oil of ivy berries, made by expreſſion or infuſion. Put your worms into this box about an hour or two before you uſe them, and they will acquire a ſmell, which is irreſiſtibly attractive, and will force any fiſh within the ſmell of them to bite.

Some have diſſolved gum of ivy in oil of ſpike, and therewith anointed a dead bait for a Pike, when the fiſh has followed it with more than common eagerneſs. And others affirm that any bait anointed with the marrow of the thigh-bone of a herne is a great temptation to any fiſh.

Camphire put with moſs into your worm-bag with your worms, makes them, if many anglers are not very much miſtaken, a tempting bait.

The

The roe of a Salmon or Trout is ſaid to be an excellent bait. You may preſerve it, by ſprinkling it with a little ſalt, and laying it upon wool in a pot, one layer of wool, and another of ſpawn.

To know at any time what bait fiſh are apt to take, open the belly of the firſt you catch, and take out his ſtomach very tenderly: open it with a ſharp penknife, and you will diſcover what he fed on.

CHAP. VIII.

Rules and Cautions to be obſerved by young Anglers.

WHEN you have hooked a fiſh, never ſuffer him to run out with the line; but keep your rod bent, and as nearly perpendicular as you can. By this method, the top will ply to every pull he ſhall make, and you will prevent the ſtraining of your line.

For the ſame reaſon, never raiſe a large fiſh out of the water, by taking the hair to which your hook is faſtened, or indeed any part of the line into your hand; but either put a landing net under him, or, for want of that, your hat. You may, indeed, in fly-fiſhing, lay hold of your line to draw a fiſh to you; but that muſt be done with great caution.

Your ſilk for whipping hooks, and other fine work, muſt be very ſmall. Uſe it double, and wax it, and indeed any other kind of binding will do with ſhoemakers wax, which of all wax is the tougheſt and holds beſt. If your wax is too ſtiff, temper it with tallow.

Incloſe the knots and joints of your lines in a ſmall pill of wax, preſſed very cloſe, and the ſuperfluities pinched off. This will ſoon harden, and prevent the knots from drawing.

If for ſtrong fiſhing you uſe graſs, which, when you can get it fine, is to be preferred to gut, remember always to ſoak it about an hour in water before you uſe it: this will make it tough, and prevent its breaking.

When

When you begin fiſhing, wet the ends of the joints of your rods, which, as it makes them ſwell, will prevent their looſening.

If you happen, with rain or otherwiſe, to wet your rod, ſo that you cannot pull the joints aſunder, turn the ferrel a few times round in the flame of a candle, and they will eaſily ſeparate.

Before you fix the loop or briſtle to your hook, in order to make a fly, to prevent its drawing, be ſure to ſinge the end of it in the flame of a candle. Do the ſame by a hair, to which at any time you whip a hook.

Make flies in warm weather only; for in cold your waxed ſilk will not draw.

In rainy weather, or when the ſeaſon for fiſhing is over, repair whatever damage your tackle has ſuſtained.

Never regard what bunglers and ſlovens tell you; but believe, that neatneſs in your tackle, and a nice and curious hand in all your works, eſpecially in fly-making, are abſolutely neceſſary.

Never fiſh in any water that is not common, without leave of the owner, which is ſeldom denied to any but thoſe, who do not deſerve it.

If at any time you happen to be overheated with walking, or other exerciſe, avoid ſmall liquors, eſpecially water, as you would poiſon; but rather take a glaſs of rum or brandy, the inſtantaneous effects whereof, in cooling the body, and quenching drought, are amazing.

The END *of the* THIRD VOLUME.

BRITISH MUSEUM 30 72

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